

DEPARTMENT OF AGRICULTURE  
C A N A D A

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R E P O R T

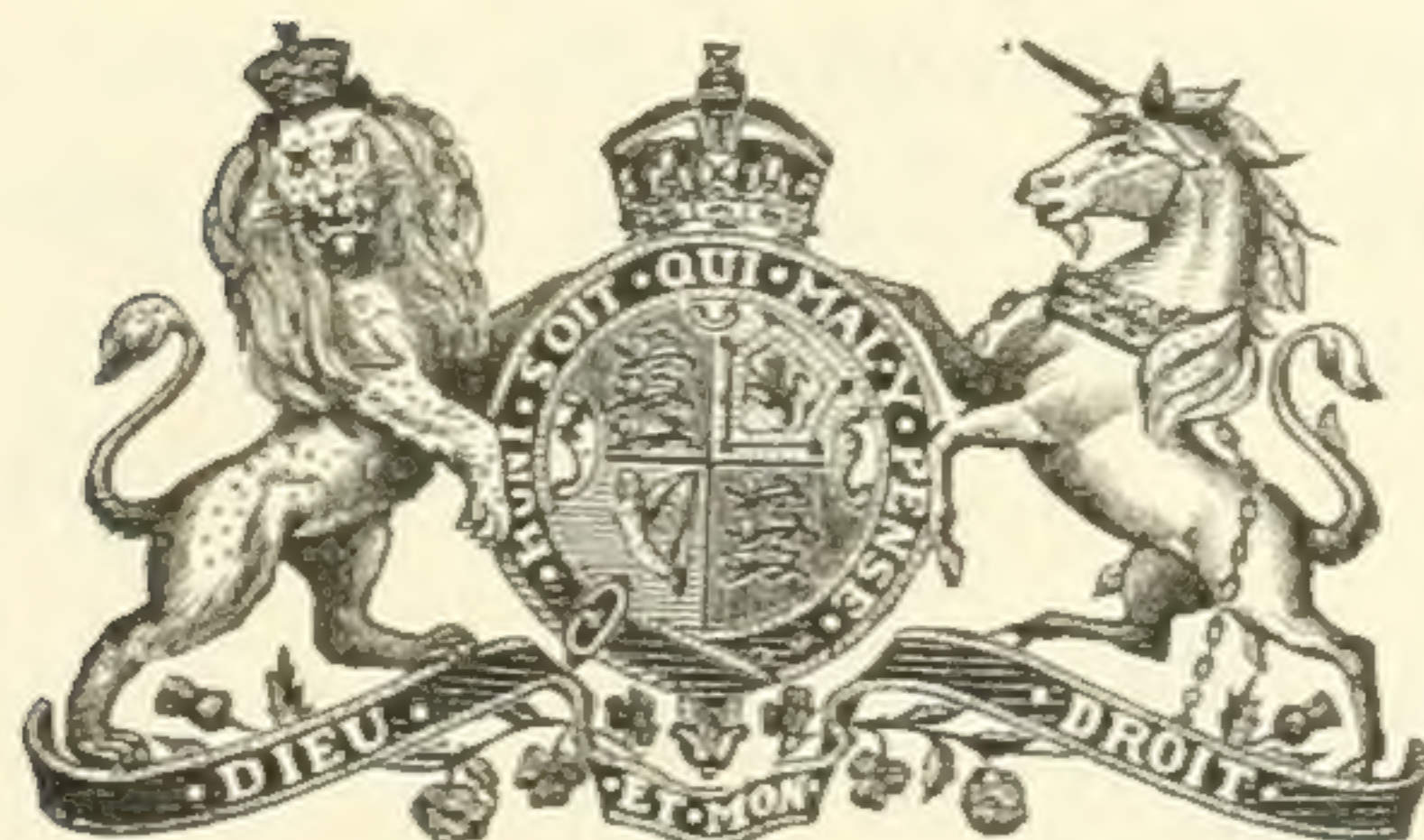
OF THE

VETERINARY DIRECTOR GENERAL

J. G. RUTHERFORD, V.S.

1905

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OTTAWA

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1906







REPORT OF THE VETERINARY DIRECTOR GENERAL

HEALTH OF ANIMALS BRANCH,  
OTTAWA, March 31, 1906.

SIR.—I have the honour to present my report as Veterinary Director General for the Dominion covering the period between November 1, 1904, and March 31, 1906. I am glad to be able to state that this period has witnessed a considerable further advance and improvement in the work of providing for the control of contagious disease among animals.

The task of organizing a thoroughly effective veterinary sanitary service for a country so vast in extent and with so wide a variety of climatic and economic conditions affecting animal life, is however, far from an easy one and while reasonable progress is being made, much remains to be done before our work can be considered to be, even approximately, on a satisfactory basis.

The nature of the duties performed by the officers of this branch is very frequently such as to provoke adverse criticism from those members of the general stock owning, and especially stock dealing public who, from want of thought or of experience regarding the disastrous effects of uncontrolled animal plagues, are inclined to look upon veterinary inspection with an unfriendly eye. It is therefore gratifying to be able to report that it has recently been my pleasant privilege to acknowledge a large number of expressions of grateful appreciation of our services emanating from some of the largest and most important live stock associations in the Dominion, as well as from many of the individuals with whom we have had official relations. This is one of the most encouraging features of the situation, especially when taken in conjunction with the prompt and cheerful responses accorded by parliament to your repeated requests for increased funds to enable you to carry on the work in an effective manner.

These evidences of appreciation not only of the importance of the work of this branch of your department, but of the active and energetic policy for the suppression and control of animal diseases which, with your approval, has now been adopted, have had their due effect in stimulating the staff to renewed exertion, and I am again pleased to be able to report that, with few exceptions, our inspectors have responded manfully to the extra pressure placed upon them and that most of them show, in addition, a marked improvement in method and technique.

The importance to the Dominion of having a thoroughly organized and competent staff of veterinary inspectors, cannot be over-estimated.

The census returns of 1901, give the following figures as to the numbers of live stock in Canada. The value as given here is based on Ontario average prices of 1903, which, of course, include stallions, bulls, &c.

Horses.. . . . .	1,577,493	\$261,863,838 00
Cattle.. . . . .	5,576,411	706,419,745 48
Sheep.. . . . .	2,511,239	21,872,891 69
Swine.. . . . .	2,353,838	50,254,441 30
	<hr/>	<hr/>
	12,018,981	1,040,410,916 47



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These statistics speak for themselves and, in view of the progress made during the last five years in every branch of agriculture, including the live stock industry, there can be no doubt that the figures then given are now largely exceeded. The unprecedented influx of settlers to the western provinces and the large importations of live stock, made by them or for their use, have greatly augmented the numbers of animals in Canada while the brisk demand for all kinds of marketable stock and especially those for breeding purposes has forced what, though perhaps in one sense, artificial, may for lack of a more lucid term, be called the natural increase, far beyond the usual rate.

When it is remembered that all this immensely valuable property is constantly in danger of serious depreciation or even total destruction from one or other of the various plagues to which the domesticated animals are unfortunately subject, it must be admitted that the expenditure of this branch of your department, while for various reasons, considerably larger than formerly, is still trifling in proportion to the interests which it exists to conserve.

An earnest endeavour has been made to keep pace with the rapid development of the country and the large increase in its live stock interests.

A number of new inspectors have been engaged, and, to as great an extent as possible, personally instructed in their various duties. In this connection, I would say that great care is necessary in the selection of these men. The fact of a man being an experienced or skilful practitioner is no guarantee of his suitability for sanitary work. To fill the position acceptably, a veterinary inspector must have certain attributes often lacking in the ordinary veterinarian, and it is no easy matter to find individuals who, while capable professionally, are also possessed of these special qualifications which include, among others, tact, suavity, integrity, and above all else, sound common sense.

For various obvious reasons it is not desirable, except under special circumstances, to employ as inspectors veterinarians engaged in general practice.

The men best suited for the work are recent graduates of good class, having the various qualities mentioned above, not yet narrowed by local practice, sufficiently well equipped as to general education, to be able to comprehend the scientific details of modern sanitary and preventive work, and if possible without encumbrances which may hinder their rapid transfer from place to place as outbreaks of disease or changing conditions in this vast country demand.

Such men are scarce in any country, and in Canada perhaps especially so, for reasons on which I need not here dwell.

When once secured and properly trained, a good veterinary inspector is a valuable asset and should be treated accordingly. He must be paid sufficiently well to induce him to remain in the service, and to improve himself with a view to promotion, and he must be guaranteed permanent employment. In most other countries, notably in the United States, veterinary inspectors are required to pass a qualifying examination before being appointed. After appointment and proof of ability to render satisfactory service, they are permanent employees and cannot be removed except for just cause.

The adoption of some such system in Canada would be a great advantage to the service and, through it, to the large and rapidly growing live stock interests of the country.

As in previous years my own time has been very fully occupied, not only in developing and systematizing the work of the branch, but in looking closely after the numerous details of its actual operation and the expenditure of the comparatively large sums which have been required in carrying out the policy of compensation adopted in 1904.

While endeavouring to spend as much time as possible in Ottawa, I have found it necessary to make a number of rapid trips to various parts of the Dominion where existing conditions rendered my personal attention advisable. Among these may be mentioned three visits to Western Canada, two of which were extended to the Paci-



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fic coast, as also a visit to Nova Scotia and New Brunswick. In addition to these lengthy journeys a number of hurried trips were made to various districts in Ontario and Quebec, due to circumstances arising in connection with my official duties. I also visited with your authority, the capitals of the United States and of Mexico for the purpose of discussing with the officials of these countries, occupying positions similar to my own, various matters of mutual interest pertaining to the regulation of international live stock trade. These latter journeys are more fully dealt with in other sections of this report.

Among the important occurrences of the past seventeen months may be mentioned the amendment of the regulations *re* glanders which by Order in Council of March 25th, 1904, were altered so as to provide for payment of compensation to owners for horses showing clinical symptoms of that disease, when slaughtered by order of a properly authorized veterinary inspector.

A somewhat serious outbreak of sheep scab in Western Ontario, which was discovered during the winter of 1904-05, rendered necessary the adoption of active measures for the suppression of that disease and the issuing of entirely new regulations for its control. A full account of this outbreak will be found elsewhere. Meanwhile I am glad to be able to report that our efforts to secure its eradication appear to have been entirely successful.

The prevalence of hog-cholera having been greatly lessened by the active policy followed since 1902, it was decided, with your approval, to relax to some extent the stringency of the restrictions governing the removal of fat hogs from the quarantined area in the counties of Kent, Essex and Lambton, and a departmental order with that object was accordingly issued on May 1. As may be seen from the special report further on, this disease would appear to be, for the present at least, fairly well under control, although there exists a constant risk of its re-introduction from the infected areas in the United States. To guard as far as possible against such contingencies, new regulations governing the transit trade in hogs, as well as their importation for any purpose, have been brought into effect.

In pursuance of the policy adopted in 1904, and in compliance with the expressed wishes of the Western Stock Growers' Association, as well as of many individual owners, it was decided to again enforce the compulsory dipping of cattle in the area quarantined for mange in Alberta and Southwestern Saskatchewan. An order to that effect was, therefore, issued on July 11th, which, together with a full statement of the work performed, will be found in the special report on this disease.

The results of the investigation into the nature and causes of Pictou cattle disease which has, since October, 1903, been in progress at Antigonish, N.S., are of such a nature as to show clearly that this malady is not only non-contagious, but is due to the ingestion of the weed known as *Senecio Jacobaea*, Ragwort or Stinking Willy. So clearly has this been demonstrated that I felt myself justified in recommending to you the discontinuance of the policy of slaughter and compensation which has been followed by the department since 1882.

I have furnished a brief resume of the work done, while the full reports of Dr. Pethick, the officer charged with the conduct of the experiments, will be found interesting.

I regret to say that the disease of horses known as *Maladie du Coit* or *Dourine*, is still giving me much anxiety. As previously reported, its existence in Canada was first brought to my notice in March, 1904, when a number of animals near Lethbridge were reported to be suffering from a peculiar form of venereal disease. Since that time the disease has appeared in several other districts in Alberta, and although much attention had been devoted to the work of control and eradication, and some progress has been made, the conditions prevailing among horses on the range, are such as to render the task of dealing with it in a satisfactory manner one of extreme difficulty. A detailed report of our efforts in this direction is printed herewith.



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At St. John, N.B., and at Halifax, N.S., work is now in progress on new quarantine stations, which, when completed, will render the importation of animals via these ports much safer and more convenient than in the past. At other coast points and at many ports of entry along the international boundary between Canada and the United States, conditions as regards live stock inspection have been greatly improved, in some cases by the erection of buildings or yards and in others by the appointment of officers. As will be seen from the detailed account of this branch of the work, our system is still far from perfect, although showing a considerable advance on former conditions.

Some changes have been made in the staff and a number of new inspectors have entered the service.

Dr. George Hilton, formerly of Manitoba, has been appointed chief assistant at Ottawa, where during my absence he has controlled the work of the branch in a very satisfactory and efficient manner.

In Quebec the only new appointment to the salaried staff is that of Dr. Etienne, formerly of St. Hyacinthe, now of Montreal, who has been steadily employed in enforcing the provisions of the Animal Contagious Diseases Act in the rural districts of Quebec.

In Ontario, Dr. Orchard, formerly our officer at Windsor, has been appointed travelling inspector of live stock cars and yards for the province, this work having been divided on Mr. M. Auger's leaving the service. Dr. F. A. Jones has taken over the duties of inspector at Windsor, while Messrs. T. G. Ferris and Thos Yates, have been appointed to enforce the new regulations governing the movement of transit stock. At Sarnia, where the duties are much less onerous, this new work is performed by Dr. Brown, our veterinary inspector, in consideration of an increase in salary.

In Manitoba, Dr. C. D. McGilvray was appointed chief inspector when the control of contagious diseases was transferred by the provincial authorities to this branch in February, 1905. Owing to pressure of work Dr. J. P. Molloy was also added to the salaried staff in September last.

In the Northwest Territories, now comprising the new provinces of Saskatchewan and Alberta, the work of the branch is still being performed under the supervision of the Commissioner of the Royal Northwest Mounted Police, with the assistance of the veterinary surgeons of that force now numbering eighteen, and of Drs. Hargrave, of Medicine Hat, and Warnock, of Pincher Creek, the latter being a new appointment, as well as of several other civilian practitioners who are employed on fees as occasion demands. The large importations of live stock, the extraordinary development of the country coupled with its enormous extent, and the difficulties experienced in dealing with animals under range conditions, make the task of controlling contagious disease in the west one of extreme difficulty. In spite of the best efforts of our officers it is impossible even with our present largely increased staff, to cover the ground in such a way as to visit all suspicious cases reported, as promptly as is desirable. While our present expenditure in the west is undoubtedly very large, I am convinced of the necessity of employing a greater number of salaried inspectors than we now have. For various and obvious reasons, I am not in favour of the appointment as inspectors of veterinarians engaged in private practice, especially in view of the important duties now devolving upon officers engaged in putting into effect the present policy of slaughter and compensation followed in dealing with glanders and *maladie du coït*.

In British Columbia, Dr. Tolmie continues to perform in an eminently satisfactory manner the duties of chief inspector for the province. Since the date of my last report, several changes have taken place in the personnel of the staff under his control. In May, 1905, Dr. D. Tamblyn took charge of the work at Midway and Grand Forks, formerly performed by Dr. C. M. Henderson, who has left the service of the department. The largely increased international traffic at the first mentioned point, due to the construction of the V. V. & E. railway, rendered necessary the appointment of another inspector, and in August, 1905, Dr. J. W. Frank, was added to the



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staff and stationed at Grand Forks. About the same time the transfer of Dr. Hadwen to take charge of the new experiment station at Lethbridge created a vacancy at Nelson which was filled by the appointment of Dr. E. C. Oliver formerly on the veterinary staff of the Royal Northwest Mounted Police, and our inspector at Cardston, Alberta. To check importations via the Okanagan and Similkameen Valleys it was found necessary to station an inspector at Osoyoos and in April, 1905, Dr. D. Coristine, also an ex-veterinarian of the Mounted Police and an experienced inspector was placed there, being at the same time appointed sub-collector of Customs.

At New Westminster, the resignation of Dr. Hart, in December, 1904, rendered another appointment necessary, and an arrangement was effected whereby Dr. J. W. Bland, formerly inspector for the Port of Vancouver, took charge, at an increased salary, of the work in the New Westminster district also.

A serious outbreak of glanders in the city of Vancouver, and a somewhat similar occurrence in the Okanagan Valley necessitated the appointment of several additional inspectors. These were mostly found among the veterinarians practising in the province, the only exceptions being Dr. Jermyn, formerly in the service in this branch in Alberta, who at the date of the outbreak was relieving Dr. Coristine, of Osoyoos, temporarily incapacitated through illness, and Dr. Wm. Lawson, of Dundas, Ontario, who, in December, accompanied Dr. Moore, to Vancouver.

In Yukon Territory the work of inspection is performed by two veterinarians of the Royal Northwest Mounted Police, under the supervision of the assistant commissioner commanding in that district. To guard against the danger of introducing disease from Alaska, authority was granted in November, 1905, to rent a stable at Forty Mile for purposes of quarantine, the non-commissioned officer of police at that point being placed in charge at a small remuneration.

## HOG CHOLERA.

It is gratifying to be able to report a further improvement in the condition of affairs as regards the prevalence of hog cholera in the Dominion and especially in the eastern provinces. Strict adherence to a definite policy in dealing with this troublesome malady has enabled us to almost completely stamp it out, so far as outbreaks elsewhere than in the quarantined area are concerned. In the area referred to, which comprises a number of townships in the counties of Essex and Kent, and the Indian reserve known as Walpole Island, in the county of Lambton, the number of outbreaks which have occurred since the date of my last report has been so small, compared with the records of previous years, that there is good ground for the hope that it will be possible to remove, at the close of the present season, even the slight restrictions still maintained against the movement therefrom of hogs for purposes other than immediate slaughter. As the disease has been gradually brought under control the restrictions have, from time to time, been made correspondingly less stringent until at the present time they interfere to a very slight extent with the general trade in hogs, although they still bear somewhat hardly on one or two individuals who are engaged in raising pure bred animals, the only available market for which is, as matters now stand, within the quarantined area.

No change was made in the restrictions from the date of my last report until May, 1905, when the following ministerial order was issued:—

DOMINION OF CANADA,

DEPARTMENT OF AGRICULTURE.

Notice is hereby given that under the provisions of the Animal Contagious Diseases Act, 1903, I do hereby declare that my order of date, March 7th, 1904, and amendments thereto regulating the movement of hogs into or out of the quarantined area comprising certain townships in the counties of Kent and Essex, and the island



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known as Walpole Island in the county of Lambton, are hereby rescinded and the following substituted therefor.

'On and after May 15, 1905, the movement of live hogs from the area comprising the townships of Camden, Howard, Harwich, Chatham, Raleigh, Dover East and West, and Tilbury East in the county of Kent, Tilbury West, Tilbury North, Rochester and Maidstone in the county of Essex, and the island known as Walpole island in the county of Lambton, is forbidden, except under the following conditions:—

'1. All shipments of live hogs from the said district must be consigned direct to a slaughter-house or packing-house equipped with the proper facilities for the slaughter and detention of such hogs in a manner satisfactory to the inspectors of this department.

'2. Shippers must notify the nearest inspector not less than forty-eight hours previously of the exact time and place of intended shipment.

'3. Each carload or part thereof of such shipments must be accompanied by a certificate of inspection signed by one of the authorized inspectors of this department, stating that the hogs comprising such carload, or part thereof, are free from disease and in every way fit for immediate slaughter.

'4. All cars used for the conveyance of such shipments must be cleansed and disinfected in a manner satisfactory to the inspectors of this department after being unloaded and before being again used for the conveyance of animals or other articles, and all waybills accompanying such shipments shall have written across the face thereof a notification that the said cars are to be cleansed and disinfected in the manner aforesaid.

'Information regarding inspectors, necessary notifications and other details may be obtained from M. B. Perdue, veterinary inspector, Chatham.

'Owners and shippers of hogs are earnestly requested to assist the officers of this department in the proper enforcement of this order.

'(Signed) SYDNEY FISHER,  
*Minister of Agriculture.*

'OTTAWA, May 1, 1905.'

At the same time authority was given to a number of veterinarians, living in proximity to railway stations within the district described, to inspect and grant certificates for shipments of hogs, when fulfilling the requirements of the order.

Several isolated outbreaks have occurred in places outside of this area, and in these it has been difficult to account for the origin of infection. It is possible, however, that the disease was conveyed by cars previously used for the carriage of American hogs, although every possible precaution was adopted to lessen the danger from this source. What would, in all probability, have proved a most serious outbreak was narrowly averted in November, 1904, when the disease made its appearance in the quarantine station at Point Edward among hogs returning from the St. Louis Exposition. On this occasion 4 valuable animals died while 27 had to be slaughtered in quarantine, and while the loss was heavy, it was trifling in comparison with that which would have probably followed had the animals in question been permitted to proceed direct to the establishments of their owners.

While on the subject of infection from American sources, I may say that the theory advanced last year as to the origin of outbreaks occurring in British Columbia, viz., the infection of the Calgary stock yards by hogs unloaded there when in transit from Minnesota to Seattle, has received striking corroboration. Through Dr. Tolmie, our chief inspector in British Columbia, it has been ascertained that the animals in question were found to be diseased on reaching their destination, thus completing the chain of evidence set forth in my last report.

I regret to say that the disease still lingers in the Pacific province, for while it has apparently been stamped out on Vancouver island it has repeatedly appeared on the



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mainland near the coast. These outbreaks, while difficult to trace, are so far as I can judge, due to importations from across the line. One outbreak was dealt with in Yukon Territory, the affected animals having been taken from near Mission Junction, British Columbia.

In April, 1905, a number of Canadian packing houses began the importation of American hogs for slaughter in bond, advancing as a reason for so doing the scarcity and consequent high price of Canadian raw material. This new departure called for prompt action with a view to reducing the risk of introducing infection to the lowest possible point. As most of the purchases were made in Buffalo and Detroit an inspector was stationed at the former place, while at the latter animals were examined by our regular officer at Windsor. Hogs bought in Chicago were inspected at Port Huron before entering Canada. The adoption of this plan obviated the necessity of inspecting at the frontier with the consequent risk of infection through other animals using the yards and chutes on the Canadian side, while it, at the same time, gave our officers a better chance to reject doubtful animals, or those which were or had been in contact with diseased stock. Shipments had to be loaded in clean cars fitted with ten-inch bottom boards, and could be consigned direct only to packing houses and slaughter houses. Arrangements were made for the thorough cleansing and disinfection of all such cars immediately after being unloaded at destination points, and although this precaution involved a great deal of extra correspondence and other work, it was apparently well worth the trouble taken to insure its thorough enforcement. While, as suggested above, this trade may have been responsible for some of the few outbreaks which occurred in unusual places, it is gratifying to be able to report that, so far as destination points are concerned, I am not aware of any cases of hog cholera having been detected either as a result of the importations or otherwise. That the trade was accompanied by serious risk is, however, beyond question, and I was greatly relieved by the decision reached in December, to forbid altogether the importation of American hogs for slaughter. At the same time the period of quarantine was very properly increased from fifteen to thirty days, while further restrictions as to certificates of health were enforced on importers.

In order to lessen the risk by infection through the heavy transit trade in hogs from western points to Buffalo and elsewhere, it was decided early in the season to adopt more stringent regulations for its control, and the following orders were accordingly issued:—

‘REGULATIONS REGARDING TRANSPORTATION OF ANIMALS BETWEEN CANADA AND THE  
UNITED STATES.

‘*By Departmental Order in virtue of Order in Council March 30th, 1904.*

‘1. All stock cars intended for the conveyance of animals from any point in Canada to the United States, or for transit through United States territory to any other part of Canada, must be thoroughly cleansed and disinfected before such animals are placed therein.

‘2. All cars conveying animals into Canada from the United States, whether such animals are intended for points in Canada or for transit to some other part of the United States, must be inspected, and unless found in a clean and sanitary condition, will be returned to the United States.

‘3. All empty stock cars, whether of Canadian origin or not, entering Canada from the United States must, if not already showing evidence of having been so treated, be thoroughly cleansed and disinfected to the satisfaction of the inspectors of this department, otherwise they will be returned to the United States.

‘4. Stock cars which have conveyed animals from the United States to points in Canada must be thoroughly cleansed and disinfected immediately after being unloaded, and before being returned to the country whence they came.



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'5. Animals intended for export to the United States, or for passage in bond through that country for export to other countries, may be inspected at such points and under such conditions as the minister may from time to time order.

'6. After May 31, 1905, all cars conveying swine from the United States into Canada, whether intended for transit to some other part of the United States, or to points in Canada, must be fitted with ten-inch foot boards in a manner satisfactory to the inspectors of this department.

'This regulation shall not apply to swine which have undergone the period of quarantine provided for in section 45 of the order in council of March 30, 1904.

'7. The practice of douching or drenching with water United States hogs, or cars containing United States hogs, while in transit through Canada is strictly prohibited.

'8. United States hogs while in transit through Canada must not be unloaded from cars containing them on any pretext whatever.

'9. Any animal dying from any cause whatever when in transit through Canada from one point in the United States to another point in that country, must not be removed from the car in which it died while in Canadian territory.

'J. G. RUTHERFORD,

'Veterinary Director General.'

'Health of Animals Branch,

'Department of Agriculture,

'Ottawa.'

*To Whom it may Concern:*

'Under the authority of section 57 of the Quarantine Regulations authorized by Order in Council, 30th March, 1904, I hereby give notice that all hogs entering Canada for transit and all cars conveying such hogs must be inspected by the inspectors of this department immediately after entering Canadian Territory. Any cars containing hogs showing evidence of disease and any cars which are dirty or which do not, in the opinion of the inspector, meet in every way the requirements of the regulations of this department are to be immediately returned to the United States.

'All inspections, as provided above, must be made between the hours of 8 a.m. and 4 p.m.

'GEO. F. O'HALLORAN,

*Deputy Minister.'*

'Department of Agriculture,

Ottawa, April 10th, 1905.'

As I was and am convinced that, under ordinary conditions, it is impossible to examine at night in a satisfactory manner, cars of hogs or other stock without much better lighting facilities than are to be found in the average railway yard, the hours of inspection were fixed as above to avoid the necessity of changing them several times in each year as the period of daylight increases or diminishes. The new regulations evoked a good deal of hostile criticism, but as the interests involved were of the first importance it was not deemed advisable to recede from the position taken. An offer made by the Michigan Central Railway Company to supply special lighting facilities was accepted on condition that the arrangement proposed was found to work satisfactorily. After a thorough trial the regulations were amended so as to provide night inspection for any company furnishing satisfactory lighting facilities. In order to meet the requirements of the traffic under these conditions, it was necessary to appoint a second inspector at Windsor, since which time everything appears to have been managed without friction.

The following figures show the progress which has been made in controlling the ravages of hog cholera. It will be noted that there have been during the last seventeen months very few outbreaks in Ontario. The prevalence of the disease in British



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Columbia is attributed to an entirely different source of contagion, and should not, therefore, be debited against the work of the department in the older provinces.

November 1st, 1901—October 31st, 1902—

Province.	Outbreaks.
Ontario.. . . . .	313

November 1st, 1902—October 31st, 1903—

Province.	Outbreaks.
Ontario.. . . . .	344
Quebec.. . . . .	10
British Columbia.. . . . .	6
	<hr/>
	360

November 1st, 1903—October 31st, 1904—

Province.	Outbreaks.
Ontario.. . . . .	121
Quebec.. . . . .	3
British Columbia.. . . . .	27
	<hr/>
	151

November 1st, 1904—October 31st, 1905—

Province.	Outbreaks.
Ontario.. . . . .	46
Quebec.. . . . .	1
British Columbia.. . . . .	4
Yukon.. . . . .	1
	<hr/>
	52

November 1st, 1905—March 31st, 1906—

Province.	Outbreaks.
Ontario.. . . . .	4
British Columbia.. . . . .	26
	<hr/>
	30
Compensation paid in fiscal year 1901-02.. . . . .	\$15,962 97
“ “ “ 1902-03.. . . . .	36,029 75
“ “ “ 1903-04.. . . . .	21,352 35
“ “ “ 1904-05.. . . . .	7,042 73
“ 1st half of “ 1905-06.. . . . .	839 34

In considering the reduction in the amount of compensation paid it should not be forgotten that since August, 1904, the rate paid has been two-thirds of the value of the animal whether actually diseased or only in contact, while formerly only one-third was paid for diseased animals, to which class the great majority of those slaughtered belonged. Were it not for this fact the expenditure would be even less than it is.



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Hog cholera statistics for the 12 months ended October 31, 1905 :

In Ontario 1,031 hogs, valued at \$7,292.98, were destroyed, in the following counties, at a cost of \$4,862.24:—

	No. of Outbreaks.	No. of Hogs Destroyed.
County of Kent—		
Harwich Township.. . . .	13	349
Howard “ . . . . .	4	95
Tilbury “ . . . . .	1	25
Chatham “ . . . . .	2	28
Dover “ . . . . .	1	40
County of Middlesex—		
Caradoc Township.. . . .	1	22
County of Essex—		
Rochester Township.. . . .	7	109
Sandwich “ . . . . .	2	48
Gosfield “ . . . . .	2	81
Maidstone “ . . . . .	4	107
Colchester “ . . . . .	1	2
Anderdon “ . . . . .	1	16
Caldwell “ . . . . .	1	30
County of Wentworth—		
Grimsby Township.. . . .	2	41
County of Oxford—		
East Zorra Township.. . . .	1	10
County of Lennox—		
Camden Township.. . . .	1	1
Pt. Edward—Quarantine. . . . .	2	27
	46	1,031

In Quebec there was an outbreak (somewhat doubtful) at Port Daniel West, Gaspé, where 2 hogs were destroyed, at a cost of \$26.

In British Columbia there were 4 outbreaks, all on Vancouver Island, where 42 animals, valued at \$261, were slaughtered at a cost of \$174.

In the Yukon there was one outbreak at Dawson, where 35 animals, valued at \$525, were destroyed at a cost of \$350.

Hog cholera statistics for the 5 months ended March 31, 1906 :

In Ontario 54 hogs, valued at \$609, were destroyed in the following counties, at a cost of \$405.99:—

	No. of Outbreaks.	No. of Hogs Destroyed.
Wentworth County, Ancaster Township.. . . .	1	25
Wellington County, Guelph Township . . . . .	1	2
Essex County, Gosfield Township.. . . .	2	27
	4	54

In British Columbia there were 26 outbreaks, 2 on Vancouver Island, and 24 in Chilliwack and New Westminster district, in which 322 hogs, valued at \$1,954.80, were slaughtered at a cost of \$1,303.12.

The following general regulations for the control of the disease were authorized by Order in Council, 6th December, 1904 :—



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'1. Every owner, breeder or importer of, or dealer in, hogs shall, on perceiving the appearance of hog cholera or swine plague amongst the hogs owned by him, or under his special care, give immediate notice to the Minister of Agriculture, and to the nearest veterinary inspector of the Department of Agriculture, of the facts discovered by him as aforesaid.

'2. Every veterinary surgeon practising in Canada shall immediately, on ascertaining or suspecting that a hog is affected with hog cholera or swine plague, give similar notice to the minister and to the nearest veterinary inspector.

'3. In the Northwest Territories, the notice required to be given by the two preceding sections of these regulations shall be deemed sufficient if given to the commissioner, assistant commissioner, or other officer of the Royal Northwest Mounted Police, or to one of the veterinary staff-sergeants of the said force.

'4. Hogs affected with hog cholera or swine plague, or which have been in contact with or close proximity to hogs affected with either of the said diseases, shall, on an order signed by a duly appointed inspector of the Department of Agriculture, be forthwith slaughtered and the carcasses disposed of as in such order prescribed.

'5. The Minister of Agriculture is hereby authorized to order compensation to be paid to the owners of such hogs at the rate set forth in sub-section 2 of section 12 of the "Animal Contagious Diseases Act, 1903" as amended by chapter 6 of the statutes of 1904.

'6. Before ordering compensation to be paid to the owners of hogs slaughtered under the provisions of these regulations, the minister shall require the production of a satisfactory report, order for slaughter, certificate of valuation and slaughter, and certificate of cleansing and disinfection.

'7. No hog which has been affected with, or has been exposed to hog cholera or swine plague, shall be permitted to run at large, or to come in contact with any hog which is not so affected.

'8. Any veterinary inspector or other duly authorized person may declare to be an infected place within the meaning of the "Animal Contagious Diseases Act, 1903," any common, field, stable, cowshed, or other place or premises where the infection of hog cholera or swine plague is known or suspected to exist.

'9. No hog shall be removed out of a place declared to be infected on account of hog cholera or swine plague, without a license signed by an inspector or other duly authorized person.

'10. Every yard, stable, hog pen or other place or premises, and every wagon, cart, carriage, or other vehicle, and every utensil or other thing infected with hog cholera or swine plague shall be thoroughly cleansed and disinfected by and at the expense of the owner or occupier in a manner satisfactory to a veterinary inspector or other duly authorized person.

'J. G. RUTHERFORD,

*'Veterinary Director General.'*

'Department of Agriculture, Ottawa.'

## TUBERCULOSIS.

No change has so far been made in the policy of the department regarding tuberculosis. Cattle imported from the United States for breeding purposes or milk production, if accompanied by a satisfactory tuberculin test chart, signed by an officer of the United States Bureau of Animal Industry, are placed in quarantine and tested. The same rule is applied to cattle of similar classes imported from Mexico. Cattle of any kind coming from other countries are tested in quarantine. The animals comprising a few herds which are placed entirely under the control and supervision of our officers are tested by and at the expense of the department. Our officers test cattle exported to the United States when intended for breeding purposes or for milk pro-



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duction. With these exceptions no testing with tuberculin is now undertaken officially, although it is supplied free to qualified veterinarians when employed by owners of cattle, on condition that the results of all tests made by them are sent in to the department on forms supplied for that purpose.

All reacting animals are permanently ear-marked by cutting a capital T out of the right ear.

In a considerable number of instances advantage has been taken of this offer, as may be seen from the fact that in the seventeen months which have elapsed since the date of my last report 7,721 doses of tuberculin have been issued from the biological laboratory.

It may be said, and with some show of reason, that the policy at present pursued by the department in regard to this insidious and destructive disease, is less active than it should be. While admitting that appearances would so indicate, I would say that my reason for counselling the policy of comparative inertia now being followed is that so far no satisfactory intelligent method of dealing with bovine tuberculosis has been evolved, and that I consider it better to await the results of the investigations now being conducted by scientists in different parts of the world, rather than to inaugurate a campaign along any of the various lines hitherto adopted, none of which have proved successful, and almost all of which have been abandoned after a more or less severe trial of public patience and a corresponding drain on public and private purses.

Since tuberculin was first introduced many communities have passed legislation regarding its use, which, after being enforced for a longer or shorter period, and causing more or less irritation and consequent agitation, has in most cases been repealed, having entirely failed in accomplishing the object desired. It was thought for many years, and by some men who should have known better, that if a herd of cattle was tested, the reactors destroyed and the premises disinfected, the disease was stamped out, the owner being left, thereafter, to follow his own courses. As I have maintained in previous reports, such a theory is absolutely wrong and untenable. Repeated experiments have shown that from 8 to 50 days may elapse after infection before it is possible to obtain from the animal a reaction to tuberculin. This being the case it goes without saying that frequent and repeated tests are necessary before it is safe to pronounce free from tuberculosis any herd which has been once infected. For example, in a herd of 100 cattle 25 are found to react to the first test. In such a case the theory was that the 75 which did not react were perfectly sound and safe. It must be remembered, however, that these 75 cattle have been living, and that in probably very close contact, with the 25 reactors. Under these circumstances it is almost certain that a second test in three months will bring to light a number of cases of tuberculosis which had not developed at the time of the first test to a sufficient extent to produce a reaction. We will say, for the sake of illustration, that these cases are ten in number, and that the remaining 65 still fail to react. Again, however, these 65 animals have been in contact with the 10 now shown to be diseased, and further tests will be required before the herd can be finally declared healthy. The same thing applies in the case of new cattle purchased to fill the places of those slaughtered, or for other reasons. A test prior to purchase while to some extent a safeguard, does not by any means constitute a guarantee of soundness. Even where the sharp practises followed by some sellers have not been brought into play, the newly purchased animal, if coming from an infected herd, must be looked upon with suspicion until its freedom from tuberculosis has been proved by a second test three months after purchase. This being the case it is necessary, in order to prevent the introduction of infection, to isolate carefully all newly purchased cattle during the period of probation. No one is more firmly convinced than myself of the value of tuberculin as a diagnostic agent, but it is subject to the limitation mentioned above, as well as to several others, among which may be mentioned the fraudulent methods adopted by many owners to prevent the occurrence of a typical reaction.



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The old plan of injecting tuberculin a few days before the time fixed for the test, and thus nullifying the work of the inspecting veterinarian was troublesome and in some cases expensive. It has also now largely lost its value as an agency for cheating through the discovery made by Professor Valle, of Alfort, that a reaction is actually obtainable even where tuberculin has been used only a short time previous, provided that taking of temperatures is commenced two hours after injection and continued until the usual time. Its place has, however, been taken by the much more cunning, and not less disreputable, practice of administering one or other of the coal tar anti-pyretics combined, as a rule, for safety's sake, with other drugs, to such animals as are known to be tuberculous or which begin to show a rise in temperature when undergoing the test. It is scarcely possible to deceive an experienced and wide-awake inspector by this scheme, but comparatively easy to hoodwink the veterinarian who depends largely on his thermometer and pays no attention to the clinical symptoms which invariably accompany and accentuate a marked reaction to tuberculin.

While believing firmly in tuberculin when honestly used as a diagnostic agent and for specific and definite purposes, I maintain that in consideration of the foregoing facts and of the many other difficulties to be encountered, it is better to wait until we are sure of achieving reasonable results and so making some progress in the eradication of tuberculosis, before we decide upon any policy which would involve universal or promiscuous testing. Meanwhile, no effort should be spared to induce owners of cattle to adopt every possible and reasonable means of combating the disease by practical common sense methods.

The Bang system which is followed by Senator Edwards and several of our other large breeders, and which has frequently been fully described in previous reports, has much to recommend it and should be more generally adopted than it is.

Within the reach of every man, however, and at the lowest possible cost, there lies the best and most effective agent yet discovered for the eradication of tuberculosis. Of infinitely greater value than tuberculin and much more easy of administration is a plentiful supply of fresh air. If there is one matter to-day in which veterinarians are behind the age it is that of failing to insist at all times, in season and out of season, on the importance to live stock of thorough and effective stable ventilation. Having before us the object lesson afforded by the medical profession and the marvelous results which its members are achieving by open air treatment, not only helping, but actually curing advanced cases of tuberculosis, to say nothing of checking the disease, as is now daily done, in its early stages, it is nothing short of disgraceful that we are yearly permitting thousands of valuable animals to become infected owing to the unsanitary conditions under which their owners insist on keeping them. Of the truth of this contention, which is, perhaps, at first sight, rather sweeping, there is no lack of proof. In northern countries where cattle are generally closely housed and where a proper system of ventilation is the exception and not the rule, we almost invariably find bovine tuberculosis rampant. In milder climates where animals have free access to fresh air, as for instance among the Hereford cattle in England, it is a rare thing to find a case of that disease. On the ranges tuberculosis is unknown except where it has been introduced by some pampered stable bred individual, and even such a one is more likely to recover than to die, provided the malady is not too far advanced and the first winter can be endured. To put the case plainly, stockmen are breeding tuberculosis a great deal faster through neglect of this important subject of ventilation than it would ever be possible to stamp it out by the promiscuous use of tuberculin and the slaughter of diseased animals.

While holding these views, I am keeping close watch on the work of Von Behring, McFadyean, Thomassen, Marmoreck and others in Europe, and Pearson, of Pennsylvania, who are devoting themselves to the task of finding some new and more effective method of dealing with the disease than has yet been made available. So far, in spite of all reports to the contrary, nothing has been achieved by their researches which would, in my opinion, warrant a change in our present attitude.



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Meanwhile I am, with your approval, carrying on two experiments which, though conducted at a very trifling cost, will, I hope, be productive of results of considerable value to the stock-owning public.

The first, which is being managed by Mr. J. H. Grisdale, Agriculturist at the Central Experimental Farm, consists in the housing of a number of healthy cattle under conditions which, while affording absolute protection from draughts, insure at all times a plentiful supply of pure air. The object sought is to determine whether or not the high temperature generally insisted on by dairymen and cattle-feeders has the effect, with which it is usually credited, of maintaining a higher yield of milk in cows and a more rapid laying on of flesh in fattening stock than is the case when warmth is to some extent sacrificed in the interests of ventilation. Owing to the exceptional mildness of the season the conditions have been less favourable to the success of the experiment as a demonstration than would have been the case in a normal Canadian winter. As there is practically no outlay involved in this test, I hope that it will be possible to continue it for several successive years, as the point at issue is one of vital importance to the dairymen and feeders of the northern zone.

The second experiment now in progress consists in the application of the principles of the open air treatment to a number of cattle known to be affected with tuberculosis, although not in an advanced stage, with a view to ascertaining to what extent it may be possible to cure the malady, or, at least, to check its progress. The opportunity to initiate this experiment at a slight expense was furnished by the reaction to tuberculin of a considerable number of the cattle kept on the Experimental Farm at Nappan, Nova Scotia, when tested in October last. As these animals, being the property of a public institution, would, under ordinary circumstances, have been destroyed, I thought the opportunity for acquiring knowledge in this way too valuable to be neglected, and they were, therefore, at my request, and with your full approval, transferred to this branch by the Director of Experimental Farms. All those showing evidence of breaking down were killed, 40 head in all being retained for experimental purposes. Of these, 28 have reacted to tuberculin, while the remaining 12 are to all appearance free from disease. All, however, are being kept together, it being desired, among other things, to obtain information as to the probability of infection by contact under open air conditions. The animals have passed the winter in a yard at Nappan, their only protection from wind and weather being a shed open at all times. They do not appear to have suffered from exposure, the only death reported having occurred within a few hours of dehorning, an operation which was considered advisable in order to prevent the animals injuring and annoying each other.

It is my intention, as soon as I can secure suitable premises, to bring these animals to the vicinity of Ottawa, where the opportunities for close observation will be much greater and the results generally more satisfactory.

The highest medical authorities are now-a-days advising, and with the very best results, our modern hothouse humanity to get 'closer to nature' in every possible way. The advantages of adopting a similar policy in the handling and housing of domestic animals are too apparent to admit of discussion. Nature has furnished our animal friends with every conceivable requisite for protection against ordinary climatic conditions, and most of the diseases and disabilities to which they are subject have been caused by, and owe their continuance to the irrational, artificial conditions imposed upon them by well meaning, but ignorant, or rather unthinking owners and attendants.

*Tuberculosis Statistics for the twelve months ended October 31 1905.*

Eight hundred and ninety cattle were tested for export, 48 of which reacted, 8 were classed as suspicious, and 834 successfully withstood the test.

One hundred and sixty-seven cattle were tested, on being imported into Canada, 8 of which reacted and 159 proved healthy.



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Eight hundred and twenty cattle were tested by private practitioners with tuberculin supplied by this department, 103 of which reacted, 17 were classed as suspicious and 700 proved to be healthy.

*Tuberculosis Statistics for the five months ended March 31, 1906.*

Six hundred and twenty-two cattle were tested for export, 20 of which reacted, and 15 were classed as suspicious, 587 thus successfully withstanding the test.

Ten cattle were tested on being imported into Canada, of which 1 only reacted, the other 9 proving healthy.

Four hundred and twenty cattle were tested throughout the Dominion by private practitioners, with tuberculin supplied by the department, 38 of which reacted, 15 were classed as suspicious, and 367 proved healthy.

With regard to this general testing, it must be borne in mind that, in many cases, the existence of tuberculosis is suspected in a herd before tuberculin is applied for, and the proportion of reactors cannot be cited as those obtained from indiscriminate testing.

All reactors were permanently ear-marked by a veterinary inspector.

## GLANDERS.

I regret to report that this disease, one of the most dangerous and insidious maladies affecting any of the domestic animals, still exists to a very serious extent among horses in several widely distant parts of the Dominion.

Previous to 1902 it was not dealt with by this department, except in the Northwest Territories and in one or two isolated instances elsewhere, its control being left to the various provinces, several of which had legislation on the subject of a more or less effective character, while others gave it no attention whatever.

In the year named, however, on ascertaining that it was threatening to become epizootic in some parts of Ontario and Quebec, it was resolved to bring it under the operation of the Animal Contagious Diseases Act. This was accordingly done, an exception being made in the case of Manitoba, where the legislation was of such a nature as to permit of its being dealt with in a fairly effective manner by the provincial authorities, acting through their own inspectors.

Since the discovery of mallein in 1890 a complete change, due to the information acquired through its use, has taken place in the views held by modern veterinarians regarding glanders. It is now definitely known that many horses are affected while, for the time being, presenting no apparent symptoms, the disease being confined to the internal organs of which the lungs are most generally involved. This being so, it goes without saying, that the method formerly followed in dealing with glanders and still in vogue in some countries, namely, the slaughter of horses showing clinical symptoms only, is entirely inadequate. Experience has shown that where one or more clinical cases are found in a stable, it is almost a certainty that some of the animals which have been directly or indirectly in contact with them are also affected. Of these many, sooner or later, develop clinical symptoms, and so become active centres of infection, while there is good ground for the belief that the disease can be communicated by animals showing no external evidence of its existence. It follows, therefore, that any system which neglects these contact cases is defective, and certain to result in spreading the disease, especially in view of the perhaps natural tendency



shown by owners to dispose, as soon as possible, of any animals left in their possession after the destruction of those visibly affected.

Where no compensation is paid for horses slaughtered, the inspector dealing with an outbreak of glanders finds himself in a very difficult position. Owners possessed of any intelligence seldom object to the slaughter of animals evidently diseased, but are naturally opposed to the killing of those which, while reacting to mallein, remain in good condition and are, so far as they can see, perfectly healthy. The tendency therefore is to refrain from testing contact horses on the theory that 'ignorance is bliss,' for if tested and found to react they must be dealt with as diseased, while if presumed to be healthy they may be left free from restrictions. The results of such an ostrich-like policy are, however, bound to be eventually disastrous as may be seen from the following figures taken from the returns of the Board of Agriculture which show the number of horses slaughtered for glanders in Great Britain under this system from 1898 to 1904 inclusive.

1898.. . . . .	1,385
1899.. . . . .	1,472
1900.. . . . .	1,858
1901.. . . . .	2,370
1902.. . . . .	2,073
1903.. . . . .	2,499
1904.. . . . .	2,628

The steady progress made by the disease under a similar policy as evidenced by the experience of Manitoba and other infected districts, furnishes additional convincing proof of the folly of ignoring the constant and very real danger connected with the contact horse even when he is absolutely free from visible symptoms of glanders.

It is known that a proportion of such horses as react to mallein when first tested, subsequently cease to show even that evidence of disease having, to all appearance, overcome the infection. Beginning in 1902, it was decided in default of compensation, to institute a system of carefully testing all contact horses and subsequently retesting such as reacted with a view to releasing those ceasing to react at the second or third test and destroying those in which the reaction persisted.

In my reports for the years 1903 and 1904, may be seen a complete record of the work done in carrying out this policy of retesting which taxed the energies of our officers to the utmost. The results achieved, while showing a great improvement on the old methods, were in no degree commensurate with the risk and labour inseparable from such a policy especially in the newer and more sparsely settled portions of the Dominion.

After a trial extending as above indicated over two years this system was found to be unworkable and far from satisfactory, inasmuch as it was shown to be practically impossible to keep reacting horses under such close observation as might offer comparative freedom from the risk of spreading infection. Among groups of reactors held for further tests, one or more are likely to develop clinical symptoms, thus becoming virulent centres of infection not only endangering the other reactors with which they are in actual contact, they being in no way immune from reinfection, but through the various indirect channels with which horsemen are familiar, threatening the health of other animals not actually housed with them. More recently, frequent proofs have been furnished that many of even the so-called ceased reactors, can be by no means looked upon as permanently cured. Several serious outbreaks can be traced directly to such horses, and making due allowance for the possibility of reinfection from outside sources, I may say that I am in possession of what I consider to be indisputable evidence in confirmation of the view that these animals are exceedingly dangerous. The risk attending their release is greatly increased by the tendency almost invariably shown by owners to dispose of them at the first available opportunity, when falling



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into the hands of unsuspecting persons, they frequently introduce the disease among their new stable companions.

The policy of retesting reactors having thus been fairly tried and found wanting while that of slaughtering clinical cases and ignoring contact horses had proved worse than useless, there remained the alternatives of leaving the disease alone to spread as opportunity offered, or of applying the only practical and, at the same time the only scientific remedy, namely the destruction of all horses giving a typical mallein reaction whether presenting any external manifestations of glanders or not.

Having decided on the latter course, you obtained from parliament during the session of 1904, the necessary authority by an amendment to the Animal Contagious Diseases Act, and at the same time, secured the increased appropriation required for purposes of compensation. This was fixed by the Act at two-thirds of the actual value of the animal in a state of health, such value being limited in the case of ordinary horses to \$150, and in the case of pure-bred horses to \$300.

On the principle that a horse showing clinical symptoms of glanders is not only absolutely valueless, but is a constant source of danger to all other horses as well as to its owner, his family and any other human beings who may directly or indirectly be exposed to the contagion, it was at first decided to pay no compensation for cases of this class. The order in council of September 19, 1904, which brought the new policy into force therefore contained a provision to that effect. It was soon apparent, however, that in order to secure early information as to the existence of glanders and to enable our inspectors to carry out the law without undue and dangerous friction, it would be necessary to amend the regulations so as to permit of the payment of compensation for all animals slaughtered in accordance with the Act.

This was accordingly done, and on March 25, 1905, the following regulations were put in force:—

‘REGULATIONS RELATING TO GLANDERS.

‘*By Order in Council dated 25th March, 1905, in virtue of “The Animal Contagious Diseases Act, 1903.”*

‘1. No animal which is affected with or has been exposed to glanders shall be permitted to run at large or to come in contact with any animal which is not so affected.

‘2. Any veterinary inspector may declare to be an infected place within the meaning of the ‘Animal Contagious Diseases Act, 1903,’ any steamship, or steam or other vessel, or any place or premises where the contagion of glanders is known or suspected to exist.

‘3. No horse, mule or ass shall be removed out of an infected place without a license signed by an inspector.

‘4. Veterinary inspectors are hereby authorized to inspect and to subject to the mallein test any horses, mules or asses affected with glanders or suspected of being so affected or which have been in contact with animals so affected or suspected of being so affected, or which have been in any way whatsoever exposed to the contagion or infection of the disease of glanders, and for the purpose of making such inspection or test to order any such animals to be collected, detained or isolated.

‘5. Horses, mules or asses affected with glanders, whether such animals show clinical symptoms of the disease, or re-act to the mallein test without showing such symptoms, shall, on an order signed by a duly appointed inspector of the Department of Agriculture, be forthwith slaughtered and the carcasses disposed of as in such order prescribed, compensation to be paid to the owners of such animals if and when the Act so provides.

‘6. In the event of the owner objecting to the slaughter of animals which re-act to mallein, but show no clinical symptoms of glanders, the inspector may order such animals to be kept in close quarantine and re-tested, such re-tests however in no case



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to exceed two in number and to be completed within four months of the first test, provided, however, that owners deciding to have their animals quarantined rather than slaughtered shall forfeit all right to compensation.

'7. Horses, mules or asses re-acting to the third test with mallein shall be forthwith slaughtered on an order signed by an inspector and the carcasses disposed of as ordered.

'8. Inspectors are hereby authorized to permit owners of horses, mules or asses which give no re-action to the third test with mallein and which have at no time shown any clinical symptoms of glanders, to retain and use such animals subject to the conditions contained in the license signed by the inspector.

'9. Before an order is made for the payment of compensation in any of the cases aforesaid, there must be produced to the Minister of Agriculture a satisfactory report, order for slaughter, certificate of valuation and slaughter, and certificate of cleansing and disinfection, all signed by an inspector.

'10. The certificate of an inspector to the effect that an animal has re-acted to the mallein test or has shown clinical symptoms of glanders, shall, for the purpose of the said Act and of this order be *prima facie* evidence in all courts of justice and elsewhere of the matter certified.

'11. Every yard, stable, outhouse or other place or premises, and every wagon, cart, carriage, car or other vehicle and every utensil or other thing infected with glanders shall be thoroughly cleansed and disinfected by and at the expense of the owner or occupier, in a manner satisfactory to a veterinary inspector.

' J. G. RUTHERFORD,

' *Veterinary Director General.*

' Department of Agriculture,  
' Ottawa.'

Since the policy of compensation was adopted many outbreaks have been reported and dealt with by our inspectors. Some of these occurred in parts of the Dominion where, so far as the department was concerned, the existence of the disease had not previously been suspected.

There is no doubt that, so long as a policy of slaughter without compensation was in force, the tendency of owners, and even of some veterinarians, was to conceal the existence of glanders and to dispose of the suspected animals as quickly as possible.

On the other hand, it can be readily understood that the adoption of a policy of paying for slaughtered animals has encouraged owners and veterinarians to report much more freely the existence of the disease. A serious outbreak in the Saguenay district had never been reported, although the disease had been raging for a number of years, while no one ever suspected the existence of glanders to any serious extent in British Columbia, although, as our figures show, a considerable number of diseased horses have been destroyed in that province during the year just past.

Again, the true state of affairs in Manitoba, as brought to light by our inspectors in that province since the work was taken over by this department from the provincial authorities in February, 1905, came as a very great surprise. For twenty years the Disease of Animals Act of Manitoba was indubitably the best in the Dominion, and the work of dealing with glanders was supposed to have been carried on in an intelligent and systematic manner. It was not, however, the policy of the provincial authorities to destroy re-actors, clinical cases only being killed, while in some cases contact horses were tested and kept under supervision, and in others they were allowed to go without further attempt at control.

The results of pursuing such a policy are very evident, as will be seen by a reference to the figures accompanying this report.

So far as it is possible to judge at this comparatively early date after its adoption, the new policy is likely to prove successful in securing the object sought, namely, the complete eradication of glanders. In those districts where the disease has been



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prevalent and where people have for many years been heavy losers from its effects, the new regulations are giving great satisfaction, and intelligent horse-owners freely express their approval of the change.

In other parts of the country where glanders has but recently appeared, it is sometimes claimed that there is no crying necessity for such stringent measures. The argument is advanced that the disease has existed in Canada and in other countries for many years without becoming epizootic or causing a loss of horseflesh as great as that resulting from the present operations of our inspectors. As can easily be shown, however, this contention is not well founded. The statistics of European countries, where these are reliable, show conclusively that glanders, under modern conditions, when dealt with by the defective methods generally in use, is exceedingly difficult to control. The figures already quoted from the returns of the Board of Agriculture of Great Britain indicate the futility of half measures. A strong effort is now being made to induce the British authorities to introduce the policy now followed in Canada as is evidenced by the following extract from a review of the report of the Board of Agriculture which appeared in the London *Lancet* on July 5, 1905:—

‘Glanders is admittedly on the increase, and it is time that some radical measures were taken to control the disease. In 1894 there were only 502 outbreaks reported, but in 1904 these had increased to 1,529, and 2,658 horses were killed as glandered. More power ought certainly to be given to the veterinary inspectors to test the in-contact horse with mallein, as by this agent an almost infallible diagnosis can be made within twenty-four, or at most forty-eight hours. The expense, although great the first year, would not be excessive if allowed to spread over a period of years; and where a preventable disease, which also causes the deaths of numbers of human beings each year is concerned, the cost ought certainly not to be considered too seriously as the reason why it should not be taken thoroughly in hand.’

If it is possible for glanders to extend its ravages to such a degree in a country like England, it is not difficult to understand why I have deemed it necessary to advise the adoption of the policy now in operation in Canada, where the geographical and economic conditions are so much more favourable to the spread of the disease and so much less favourable to the systematic supervision of suspected cases.

In localities where the nature of the disease has not been recognized, and where no intelligent efforts have been directed towards its control, the results have invariably been disastrous.

As an instance of this, I would again refer to the experience of the Saguenay Lumber Company, the secretary of which reports a loss by death in less than four years of upwards of fifty head of valuable horses, all of which, according to him, died of glanders. Not only did these horses die, but the whole district in which they were kept has become infected to such an extent as to render it almost an impossibility to stamp out the disease without destroying an overwhelming majority of the horses therein.

There are several points in connection with the spread of glanders which must be considered in dealing with the statements made by opponents of our present policy. One of these, and perhaps the most important, is the great change which has taken place of recent years in regard to the transportation of horses from place to place. Granting that in communities, and especially farming communities where new horses, with the exception perhaps of valuable breeding stock, are but seldom introduced, immunity from glanders may be long enjoyed. I would remind you that the violent fluctuations in the value of horseflesh which have characterized the last twelve years have led to the movement of large numbers of these animals from various parts of this continent to other places, and that, by this means the disease has obtained a foothold in many districts where it was formerly unknown.

I am satisfied that never before have conditions been so favourable for the spread of glanders as they are now, when it is possible to transport horses for thousands of miles with comparative ease and at a small fraction of the cost formerly necessary.



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Among the most dangerous and persistent agents in the dissemination of glanders and other diseases are the range horses, which during the last ten years have been shipped from the western States in large numbers to supply the temporary shortages arising from the unfortunate cessation of breeding which resulted from the depression of prices in the early nineties.

The mortality from the disease on the range itself is not very great, the conditions being favourable to its maintaining a latent form, but it soon develops when the infected animals are broken, stabled and put to work, as has been demonstrated again and again; a chain of outbreaks having frequently followed exactly the route taken by one of the numerous itinerant bands of bronchos imported for the purpose of being peddled to farmers.

While inspection at the boundary is enforced, it is, in many cases, impossible to detect the existence of glanders without the aid of mallein. Although involving considerable inconvenience to importers, it would almost appear necessary to make provision for the testing of all horses introduced from the other side.

In many states of the Union no serious attempt is made by the authorities to deal in an effective way with outbreaks of glanders, and as a result a good deal of private testing is carried on, the reactors being subsequently disposed of as soon as possible. As such horses are sold at a sacrifice, they are as a rule quickly picked up, and there is no doubt that some of them are brought into Canada either by persons ignorant as to their true condition or unscrupulous enough to run the risk of having them pass inspection at the boundary before the disease has developed sufficiently to admit of its existence being detected by ordinary methods.

The dissemination of glanders in modern times is, beyond question, largely assisted through the agency of these private mallein tests conducted by unscrupulous horse owners and veterinarians.

Leading authorities in London, the great hot-bed of glanders in Britain, attribute largely to this cause the rapid spread of the disease and the occurrence of outbreaks in the most unexpected places. The practice was rapidly coming into vogue in Canada, and is yet, I fear, practised to some extent, although reputable veterinarians have ceased to indulge in private testing since the 'A.C.D.' Act was amended in 1903, requiring them to report all cases of contagious disease coming under their observation.

The promptitude now shown by the department in sending inspectors to investigate all reported outbreaks has also done much to prevent private testing and attempts at the treatment of suspicious cases.

While realizing to the full the serious nature of our present operations, and the large expenditures necessary to carry them on, I cannot conscientiously, as a responsible official, recommend any change in the present system. To revert to the former condition of affairs would simply be to court disaster. It is true that the expenditure this year has been very large, exceeding altogether, for reasons explained above, the sum which I had considered would be sufficient, but I feel certain that the amount of money necessary will become less yearly, and that we will finally, if the work is honestly and faithfully carried out, be able to congratulate ourselves and the country on the practical eradication of what is now one of the most serious causes of loss to the Canadian owner of horse flesh.

Compared with the amounts spent by other countries in stamping out diseases of animals, our expenditure is very moderate. Great Britain paid in compensation for cattle slaughtered for rinderpest, between 1865 and 1868, over \$5,500,000; while the cost of eradicating pleuro-pneumonia involved an outlay in compensation alone of nearly two million dollars. To stamp out the recent outbreak of foot and mouth diseases in New England, cost the United States Government, \$1,500,000, and this expenditure though large, was doubtless true economy in view of the recent statement of the President of the British Board of Agriculture that that disease had, since 1890, cost the farmers of Britain over \$12,000,000.



## SESSIONAL PAPER No. 15a

In this connection I would refer you to the ratio of decrease in the amounts expended for compensation in connection with hog cholera, since the adoption of the energetic policy which has been pursued by the department since 1902.

Paid in fiscal year	1901-02.. . . . .	\$15,962 97
"	" 1902-03.. . . . .	36,029 75
"	" 1903-04.. . . . .	21,352 35
"	" 1904-05.. . . . .	7,042 73
1st half of	" 1905-06.. . . . .	839 34

These results have been achieved in spite of many complaints made by owners and dealers in hogs, who considered our policy unnecessarily severe, while many people also thought that the expenditure incurred was unjustifiable. The results, however, are such as to show that we were right, and I am confident that similar benefit will follow the consistent carrying out of the present regulations *re* glanders. No great victory of any kind has ever been won by following a half hearted policy. This is especially true of campaigns against contagious disease, whether of man or animals, as has already been demonstrated times without number.

The following notice has been widely distributed throughout the Dominion, for the purpose of disseminating information regarding the disease and warning farmers and other horse owners as to the danger of infection and instructing them as to the best methods of dealing with horses and stables in the event of an outbreak taking place on or in proximity to their premises.

## NOTICE—GLANDERS.

'In districts where the existence of glanders is suspected, and especially in neighbourhoods where actual outbreaks have occurred, the adoption of the following precautions by owners of horses and others interested will do much to prevent the spread of the disease and the establishment of fresh centres of infection.

'1. Horses or mules having a nasal discharge or other suspicious symptoms should not be admitted to livery or feed stables or yards, blacksmith shops, church or school sheds, railway stock yards, private stables or other places where they are likely to come into direct or *indirect* contact with animals of the equine species.

'2. All stables, yards or sheds used for the accommodation of horses or mules should be regularly and frequently cleansed and disinfected in the manner prescribed below.

'3. After cleansing the premises thoroughly and burning all debris, the interior should be well gone over with hot steam or boiling water, adding to the latter at least one quart of crude carbolic acid to each five gallons, after which the entire surface should be thickly coated with a hot solution of fresh lime wash, to which crude carbolic acid has been added in the above mentioned proportion.

'Outbuildings, fences and tying posts with which infected animals have been in contact should also, when possible, be thoroughly treated in a similar manner.

'All ordinary harness and stable utensils, which have been in contact with infected animals or infected premises, should be thoroughly soaked in a hot solution of crude carbolic acid of a strength of one part to twenty.

'Materials which might be injured by the above treatment, such as valuable harness, robes, cushions, &c., which have been in contact with infection, should be placed in an air-tight room and fumigated with formaldehyde, after which they should be thoroughly cleansed.

'4. In stables where outbreaks have occurred or where diseased animals have inadvertently or otherwise been stabled, even temporarily, the cleansing and disinfection should be especially thorough, and in such cases it is safest to remove and burn feed boxes and mangers when of wood; iron articles can be rendered harmless by passing them through fire or by immersing them for some time in boiling water. All litter from suspected animals should be burned or carefully fenced until used.



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‘ 5. Farmers and others should, whenever possible, avoid admitting strange horses or mules to the premises occupied by their own animals especially of the same species. It is a good plan to reserve an isolated building for outside horses or mules, but where this is impossible they may be accommodated in cow stables, cattle not being subject to glanders infection. Such horses and mules should be watered from special pails, which, together with all other stable utensils used on or about them, should be carefully cleansed and disinfected before being used for other animals. Stalls occupied by strange horses or mules should be well cleansed and disinfected and, if at all possible, left unoccupied for some time.

‘ 6. Where new horses or mules are purchased in or from districts where glanders exists, they should, unless carefully tested with mallein prior to purchase, be stabled apart and closely watched for some time before being brought in contact with other animals of the equine species.

‘ 7. It must be borne in mind that while nasal discharge, or ulceration, enlarged glands, the presence of farcy buds, unaccountable swelling of the limbs and general unthriftiness often characterize cases of glanders, the disease exists in many animals without, for the time being, any external manifestation whatever, the only means of detection in such cases being the mallein test, and that these occult or latent cases are in some respects the most dangerous because unsuspected. Our experience shows that it is possible for animals of this class to convey infection to others without themselves developing acute symptoms. It is therefore plain that great caution should be exercised in the purchase or handling of strange horses or mules, especially in those districts where the disease has become established.

‘ 8. The carcasses of animals dying from or slaughtered as being affected with glanders should, when possible, be burned, or, failing this, buried at least six feet beneath the surface.

‘ 9. Owners of premises where outbreaks have been dealt with should bear in mind that inspectors cannot recommend release from quarantine unless disinfection has been carried out in a satisfactory manner, and that compensation for animals slaughtered cannot be paid until a certificate of cleansing and disinfection has been received by the Minister of Agriculture.

‘ 10. Horse owners should have no hesitation in reporting to this department, or to its inspectors, the existence of actual or suspected cases of glanders. The disease has been spreading rapidly of late years, and it is a matter of public interest that every fresh centre of infection should be discovered and dealt with as promptly as possible.

‘ J. G. RUTHERFORD,

‘ *Veterinary Director General.*

‘ Department of Agriculture, Ottawa, March, 1906.’

#### GLANDERS STATISTICS FOR THE 12 MONTHS ENDED 31ST OCTOBER, 1905.

##### *Dominion.*

During the year 2,113 horses were slaughtered, as hereunder shown.

2,113	259 killed on inspection.			} Valued at \$221,777.50, at a cost of \$147,851.43.
	1,583	“	1st test.	
	145	“	2nd “	
	71	“	3rd “	
	23	“	4th “	
	9	“	5th “	
	8	“	6th “	
	3	“	7th “	
	12	“	previous ceased reactors.	

Nine hundred and thirty-two showed clinical symptoms.



## SESSIONAL PAPER No. 15a

Four thousand eight hundred and ninety-nine horses were tested with mallein, of which 1,854 reacted and were destroyed.

Of the 1,854 reactors, 673 showed clinical symptoms of glanders at or during the test.

One hundred and seventy-three horses ceased to react.

One hundred and eight horses are being held for retest.

*Quebec.*

319	{	65 killed on inspection.	}	Valued at \$34,636.50, at a cost of
		220 " at 1st test.		
		16 " 2nd "		
		5 " 3rd, "		
		8 " 4th "		
		3 " 5th "		
		2 " previous ceased reactors.		\$23,091.06.

One hundred and eighty-seven showed clinical symptoms.

Four hundred and eleven horses were tested with mallein, of which 254 reacted and were destroyed.

Of the 254 reactors, 122 showed clinical symptoms of glanders at, or during, the test.

In Quebec there were 16 ceased reactors of which—

5 ceased at the 2nd test.

3 " 3rd "

5 " 4th "

2 " 5th "

1 " 7th "

Sixty-one horses are still under control for retest.

Of the 319 horses slaughtered in Quebec—

319	{	23 were in Drummond and Arthabaska.	}
		11 " Richmond and Wolfe.	
		24 " Pontiac.	
		49 " Wright.	
		8 " Vaudreuil.	
		15 " Lotbiniere.	
		5 " Bagot.	
		7 " St. Hyacinthe.	
		3 " Dorchester.	
		8 " Argenteuil.	
		2 " Laprairie and Napierville.	
		11 " Yamaska.	
		11 " Montreal City.	
		7 " Richelieu.	
		17 " Nicolet.	
		1 " Missisquoi.	
		7 " Chambly and Vercheres.	
		1 " Champlain.	
		1 " Sherbrooke.	
		1 " Bellechasse.	
		5 " Beauce.	
		3 " Megantic.	
		84 " Chicoutimi and Saguenay.	
		5 " Three Rivers and St. Maurice.	
		3 " Labelle.	



*Ontario.*

84	{ 7 killed on inspection.			} Valued at \$8,509, at a cost of
	55	"	at 1st test.	
	3	"	2nd "	
	4	"	3rd "	
	5	"	4th "	
	1	"	5th "	
	2	"	7th "	
	7	"	previous ceased reactors.	
				\$5,672.50.

Forty showed clinical symptoms.

One hundred and eighty-one were tested with mallein, of which 77 reacted and were destroyed.

Of the 77 reactors, 33 showed clinical symptoms of glanders at, or during, the test. Twelve horses ceased to react in Ontario, of which

2 ceased at the 3rd test.			
8	"	4th	"
1	"	7th	"
1	"	8th	"

No horses are held for retest.

Of the 84 horses slaughtered in Ontario—

84	{ 24 were in the county of Carleton.			}
	1	"	"	
	6	"	"	
	9	"	"	
	1	"	"	
	14	"	"	
	2	"	"	
	4	"	"	
	2	"	"	
	2	"	"	
	4	"	"	
	6	"	"	
	1	"	"	
	1	"	"	
	2	"	"	
	2	"	"	
	3	"	"	
				Halton.
				Renfrew.
				Russell.
				Muskoka.
				Wellington.
				Essex.
				Grey.
				Toronto.
				Huron.
				Middlesex.
				Nipissing.
				Waterloo.
				Oxford.
				Addington.
				Lennox.
				Hastings.

*Manitoba.*

661	{ 70 killed on inspection.			} Valued at \$79,165, at cost of \$52,776.67.
	571	"	at 1st test.	
	20	"	2nd "	

Two hundred and fifty-two showed clinical symptoms.

One thousand one hundred and fourteen horses were tested with mallein, of which 591 reacted and were destroyed.

Of the 591 reactors, 182 showed clinical symptoms of glanders at, or during, the test.



## SESSIONAL PAPER No. 15a

Of the 661 horses slaughtered in Manitoba—

147	were in the district of Marquette.
64	" " Brandon.
132	" " Lisgar.
101	" " Macdonald.
114	" " Provencher.
82	" " Selkirk.
21	" " Winnipeg.

Eight horses ceased to react in Manitoba all at the 2nd test.  
Two horses are being held for retest.

*Northwest Territories.*

942	{	113	killed on inspection.	}	Valued at \$88,962, at a cost of  \$59,308.
		642	" at 1st test.		
		102	" 2nd "		
		61	" 3rd "		
		10	" 4th "		
		5	" 5th "		
		7	" 6th "		
		2	" previous ceased reactors.		

Four hundred and thirty-eight showed clinical symptoms.

Two thousand seven hundred and fourteen horses were tested with mallein, of which 829 reacted and were destroyed.

Of the 829 reactors, 325 showed clinical symptoms of glanders at, or during, the test.

In the Northwest there were 132 ceased reactors of which—

132	{	69	ceased at the 2nd test.	}
		40	" 3rd "	
		18	" 4th "	
		5	" 6th "	

Seventeen horses are still under control for retest.

Of the 942 horses slaughtered—

942	{	633	were in the Regina and Moosejaw districts and south and east thereof.	}
		127	" Prince Albert and Battleford districts.	
		57	" Maple Creek and Medicine Hat districts.	
		64	" Calgary district.	
		29	" Macleod and Lethbridge districts.	
		32	" Fort Saskatchewan district.	

*British Columbia.*

98	{	3	killed on inspection.	}	Valued at \$9,455, at a cost of \$6,303.20.
		91	" at 1st test.		
		4	" 2nd "		

Thirty-four showed clinical symptoms.

One hundred and sixty-four horses were tested with mallein, of which 95 reacted and were destroyed.

Of the 95 reactors, 31 showed clinical symptoms of glanders at or during the test.

Of the 98 horses slaughtered—

98	{	46	were at the Pacific Coast.	}
		5	" Eastern British Columbia.	
		47	" in the Okanagan Valley.	

Three horses ceased to react in British Columbia all at the 2nd test.

Twenty-eight horses are being held for retest.



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*Yukon.*

9	{	1 killed on inspection.	}	Valued at \$1,050, at a cost of \$700.
		4 " at 1st test.		
		1 " 3rd "		
		1 " 6th "		
		1 " 7th "		
		1 " previous ceased reactor.		

One showed clinical symptoms.

Fifteen horses were tested, of which 8 reacted and were destroyed, none showing clinical symptoms of glanders.

Of the 9 horses killed—

9	{	6 were killed in and around Dawson.	}
		3 " at Forty Mile, Y.T.	

Two horses ceased to react at the 2nd test.

No horses are being held for retest.

## GLANDERS STATISTICS FOR THE PERIOD BETWEEN NOVEMBER 1, 1905, AND MARCH 31, 1906.

13,807	{	102 killed on inspection.	}	Valued at \$162,070, at a cost of \$108,045.76.
		1,029 " at 1st test		
		231 " 2nd "		
		21 " 3rd "		
		1 " 7th "		
		1 " 9th "		
		2 " previous ceased reactors.		

Five hundred and sixty-one showed clinical symptoms of glanders.

Three thousand nine hundred and fifty-seven were tested with mallein, of which 1,285 reacted and were destroyed.

Of the 1,285 re-actors, 459 showed clinical symptoms of glanders at or during the test.

Two hundred and fourteen horses are now under control for retest.

One horse ceased to react.

*Quebec.*

141	{	11 killed on inspection.	}	Valued at \$16,930, at a cost of \$11,286.45.
		117 " at 1st test.		
		12 " 2nd "		
		1 " 3rd "		

Forty-six showed clinical symptoms.

Three hundred and twenty-three horses were tested with mallein, of which 130 reacted and were destroyed.

Of the 130 reactors, 35 showed clinical symptoms of glanders at or during the test.

Five horses are being held under control for retest.

One horse ceased to react at 3rd test.



## SESSIONAL PAPER No. 15a

Of the 141 horses slaughtered in Quebec---

141	{	10	were in Nicolet.
		1	" Richelieu.
		10	" Megantic.
		33	" Saguenay and Chicoutimi.
		4	" Labelle.
		16	" Yamaska.
		15	" Pontiac.
		9	" Montreal.
		8	" Dorchester.
		4	" Quebec.
		4	" Vaudreuil.
		7	" Montmagny.
		2	" Wright.
		1	" Three Rivers.
		8	" Drummond.
		5	" L'Islet.
		4	" Arthabasca.

*ERRATUM.*

Page 28: Under heading 'Glanders Statistics for the Period Between November 1, 1905, and March 31, 1906,' for 13,807 read 1,387.

114	{	23	were in Ottawa.
		1	" Northumberland.
		2	" Toronto.
		44	" Rainy River.
		41	" Perth.
		3	" Addington.

*Manitoba.*

210	{	20	killed on inspection.	}	Valued at \$24,415 at a cost of \$16,276.60.
		187	" at 1st test.		
		1	" 2nd "		
		2	" 3rd "		

One hundred and thirteen showed clinical symptoms of glanders.



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*Yukon.*

9	{	1 killed on inspection.	}	Valued at \$1,050, at a cost of \$700.
		4 " at 1st test.		
		1 " 3rd "		
		1 " 6th "		
		1 " 7th "		
		1 " previous ceased reactor.		

One showed clinical symptoms.

Fifteen horses were tested, of which 8 reacted and were destroyed, none showing clinical symptoms of glanders.

Of the 9 horses killed—

9	{	6 were killed in and around Dawson.	}
		3 " at Forty Mile, Y.T.	

Two horses ceased to react at the 2nd test.

No horses are being held for retest.

*Quebec.*

141	{	11 killed on inspection.	}	Valued at \$16,930, at a cost of \$11,286.45.
		117 " at 1st test.		
		12 " 2nd "		
		1 " 3rd "		

Forty-six showed clinical symptoms.

Three hundred and twenty-three horses were tested with mallein, of which 130 reacted and were destroyed.

Of the 130 reactors, 35 showed clinical symptoms of glanders at or during the test.

Five horses are being held under control for retest.

One horse ceased to react at 3rd test.



## SESSIONAL PAPER No. 15a

Of the 141 horses slaughtered in Quebec--

141	{	10	were in Nicolet.
		1	" Richelieu.
		10	" Megantic.
		33	" Saguenay and Chicoutimi.
		4	" Labelle.
		16	" Yamaska.
		15	" Pontiac.
		9	" Montreal.
		8	" Dorchester.
		4	" Quebec.
		4	" Vaudreuil.
		7	" Montmagny.
		2	" Wright.
		1	" Three Rivers.
		8	" Drummond.
		5	" L'Islet.
		4	" Arthabasca.

*Ontario.*

114	{	2	killed on inspection.	}	Valued at \$15,300 at a cost of \$10,206.64.
		54	" at 1st test.		
		53	" 2nd "		
		3	" 3rd "		
		1	" 7th "		
		1	" 9th "		

Forty showed clinical symptoms.

Two hundred and nine were tested with mallein, of which one hundred and twelve reacted and were destroyed.

Of the 112 reactors, 38 showed clinical symptoms of glanders at or during the test.

Four horses are being held under control for retest.

Of the 114 horses slaughtered in Ontario—

114	{	23	were in Ottawa.
		1	" Northumberland.
		2	" Toronto.
		44	" Rainy River.
		41	" Perth.
		3	" Addington.

*Manitoba.*

210	{	20	killed on inspection.	}	Valued at \$24,415 at a cost of \$16,276.60.
		187	" at 1st test.		
		1	" 2nd "		
		2	" 3rd "		

One hundred and thirteen showed clinical symptoms of glanders.



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Six hundred and thirty-three were tested with mallein, of which 190 reacted and were destroyed.

Of the 190 reactors, 82 showed clinical symptoms of glanders at or during the test.

Seven horses are being held for retest.

Of the 210 horses slaughtered in Manitoba—

210	{	39	were in the district of Macdonald.	
		30	" "	Marquette.
		20	" "	Selkirk.
		55	" "	Provencher.
		7	" "	Lisgar.
		10	" "	Brandon.
		19	" "	Souris.
		8	" "	Dauphin.
		3	" "	Winnipeg.
		19	" "	Portage la Prairie.

*Saskatchewan.*

230	{	43	killed on inspection.	}	Valued at \$27,360, at a cost of \$18,239.68.
		176	" at 1st test.		
		9	" 2nd "		
		2	" previous ceased reactors.		

One hundred and thirteen clinical symptoms of glanders.

Seven hundred and eighty-eight horses were tested with mallein, of which 187 reacted and were destroyed.

Of the 187 reactors, 70 showed clinical symptoms of glanders at or during the test.

Fifty horses are being held for retest.

Of the 230 horses slaughtered in Saskatchewan—

230	{	35	were in Prince Albert district.	
		19	" Battleford	"
		50	" Regina	"
		35	" Moosejaw	"
		28	" Estevan	"
		40	" Yorkton	"
		17	" Wood Mountain	"
		6	" Maple Creek	"

*Alberta.*

68	{	17	killed on inspection.	}	Valued at \$7,460, at a cost of \$4,973.27.
		48	" at 1st test.		
		3	" 2nd "		

Forty-one showed clinical symptoms of glanders.

One hundred and seventy-one horses were tested with mallein, of which 51 reacted and were destroyed.

Of the 51 reactors, 24 showed clinical symptoms of glanders at or during the test.

Five horses are being held for retest.



## SESSIONAL PAPER No. 15a

Of the sixty-eight horses slaughtered in Alberta—

68	{	6	were in the Medicine Hat district.	
		24	"	Macleod and Lethbridge district.
		19	"	Calgary district.
		12	"	Edmonton "
		7	"	Red Deer "

*British Columbia.*

623	{	8 killed on inspection.	}	Valued at \$70,595, at a cost of \$47,063.12.
		447 " at 1st test.		
		153 " 2nd "		
		15 " 3rd "		

Two hundred and eighteen showed clinical symptoms of glanders.

Eighteen hundred and thirty-three horses were tested with mallein, of which 615 reacted and were destroyed.

Of the 615 reactors, 210 showed clinical symptoms of glanders at or during the test.

One hundred and forty-three horses being held under control for retest.

Of the 623 horses slaughtered in British Columbia,

623	{	192	were at the Pacific coast.
		46	were in eastern British Columbia.
		385	were in the Okanagan valley.

*Yukon.*

One horse killed on inspection in the Dawson district; no compensation paid.

## PICTOU CATTLE DISEASE.

I am glad to be able to report that the results of the investigation into the nature and causes of Pictou cattle disease, which was begun at Antigonish in October, 1903, have been sufficiently definite to warrant me in recommending the removal of this malady from the list of those coming under the operation of the Animal Contagious Diseases Act. For upwards of twenty years it has been the policy of the department to order the slaughter of affected animals and to pay compensation for them, as also to insist on the disinfection of the buildings in which they had been kept. During the whole of this time, and in fact for many years previous, the more intelligent residents of the district in which the disease prevails have been of the opinion that it is not only non-contagious, but that its prevalence is due to or connected in some way with the weed known as *Senecio Jacobæa* or ragwort, locally known as 'Stinking Willie.' Evidence existed to show that the disease was unknown until the weed in question was accidentally introduced with ballast brought from Scotland to the town of Pictou some fifty years ago. Once established the plant spread gradually through the surrounding country, extending, however, owing to the prevailing winds, the seed being light and easily carried by their agency, to a much further distance eastward than westward of its original starting point. Shortly afterwards the disease made its appearance, and although some years elapsed before any suspicion as to the weed being its cause was aroused, it was at last noted as a peculiar coincidence that only the cattle kept in the weedy area were affected. As



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time passed it was further observed that the mere presence of the plant in a district was not apparently sufficient to produce the affection, but that it was only after it had obtained a firm foothold in the pastures and meadows that the disease began to make its appearance.

About the year 1882, an attempt at investigation was made and some experiments were undertaken with a view to ascertaining whether or not there was any foundation for the popular belief as to the connection between the weed and the disease, which by this time, had been recognized as a peculiar and almost specific cirrhosis of the liver. Unfortunately, however, these experiments were unsuccessful in throwing any new light on the subject, with the result that Pictou cattle disease was declared to be contagious, and the policy of slaughter and compensation above referred to brought into force. From time to time in after years the subject was investigated by Dr. William Osler, Dr. Adami, the late Dr. Wyatt Johnston and other skilled pathologists, but invariably with negative results so far at least as concerned the establishment of any definite and intelligent theory as to its true nature and causes.

During the whole of this time close observers in the affected district were becoming each year more strongly convinced that ragwort and that alone was responsible. Many of these men, although receiving little encouragement to do so, took steps to eradicate the plant from their farms and to induce their neighbours to do likewise, with the result that their animals remained unaffected, while those kept on weedy farms sickened and died. These conditions were especially noticeable when, in addition to keeping the weed down in the pastures, care was taken to remove it from the hay fed during the winter. It was also observed that in years when scarcity of hay necessitated wintering cattle on straw, animals so treated seemed to be immune. In the light of our recent experiments it seems almost incredible that these and similar facts did not sooner force a full recognition of the true situation, which would have undoubtedly been the means of inaugurating a campaign of extermination against the weed at a time when such a task would have been much less difficult than now.

For some years Dr. Gilruth, chief veterinarian and bacteriologist to the government of New Zealand, devoted considerable attention to a peculiar hepatic cirrhosis known in that colony as Winton disease, and from which, up to 1901 and these in one locality only, horses had appeared to suffer to a greater extent than either cattle or sheep. Dr. Gilruth initiated some experiments and finally reached the conclusion, without doubt well justified, that the trouble was entirely due to the ingestion of ragwort. His experiments, while convincing, were not, owing to apparently unavoidable circumstances, conclusive, although strengthened by corroborative evidence from Cape Colony, where a like disease has been traced by Mr. W. H. Chase, government veterinarian, to the agency of another plant of the same species *Senecio Burchelli*.

For the above and other apparent reasons, such as the different climatic, economic and dietetic conditions and the lack of absolute proof of the identity of Pictou cattle disease with the hepatic cirrhosis of the Antipodes, his decision could not, with propriety, have been accepted by this department as the basis for a complete change of policy even had it been made public before the inauguration of our own experimental work at Antigonish in 1903.

The latter has been very interesting and its results are convincingly corroborative of the views of those who have consistently held to the ragwort theory.

My last report contained a full account of what had been done during the year preceding October 31, 1904, together with our findings up to that date, but in order to make the case perfectly clear, I think it best to recapitulate the main points before proceeding to deal with the intervening period.

In October, 1903, I, with your approval, leased, for experimental purposes, a farm of 200 acres at Cloverville, county of Antigonish, Nova Scotia. This farm is, of course, situated within the ragwort area, but is further well known as one on which the disease in former years frequently made its appearance. Thirty-four cattle were purchased, four of which had been raised on the premises, the remainder being secured



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from districts in which there is no ragwort. Sixteen head, including the four natives, were placed in an old stable on the premises, in which, at different times, thirty-six cattle had died from hepatic cirrhosis. They were fed entirely on food imported from Quebec. Four were given a liberal allowance of sound hay with a full grain ration, four a liberal allowance of hay with a smaller grain ration, four a liberal allowance of hay without grain, and four a limited allowance of hay only.

The other eighteen head were placed in an entirely new stable erected at a considerable distance from the old buildings. Sixteen of these were divided into quartettes and fed in exactly the same way as above mentioned, except that the hay given to them, being secured in the neighbourhood, contained a considerable quantity of ragwort.

The remaining two cattle were housed together in a separate compartment of the new stable, one being fed on chopped ragwort and the other on oat straw, a small ration of bran being given to each.

The progress of the experiments up till October 31st, 1904, was described in my report of that date, but in view of the remarkable results obtained, and of all the circumstances in connection with the case, I have thought it best to make the present statement complete in itself.

Leaving out details which are fully dealt with in the exhaustive reports furnished by Dr. Pethick, which are printed herewith, I may state that all the 16 cattle kept in the old and supposedly infected stable, and fed on imported hay, which was, of course, free from ragwort, remained perfectly healthy for the entire period of 23 months, during which the experiments were in progress, although in the summer of 1905, eight of these cattle were kept in a weed infested pasture in which 14 animals had died of hepatic cirrhosis in the short space of five months. Several of these animals had also been placed from time to time in close and continued contact with diseased animals, with a view to ascertaining whether or not the disease was transmissible in this way.

During the summer of 1905, also, ten of these animals were inoculated in various ways, either with blood or abdominal ascitic fluid taken from an animal affected with Pictou cattle disease, to such an extent that Dr. Higgins, our pathologist, reported the cirrhotic lesions of the liver to be more extensive than in any of the others which he had examined. In spite of these severe tests, the animals continued to thrive, and when I last saw them in September, 1905, were in excellent condition, those which had been fed grain presenting a remarkably fine appearance. Thirteen of these cattle were slaughtered between October 10th and November 1st, under the careful inspection of Dr. Pethick, as well as of several experienced butchers, all organs being found healthy and the flesh of superior quality. Specimens from the different organs were also forwarded to the laboratory here, and pronounced by our pathologist to be absolutely free from disease. The other three animals, being pregnant cows, were allowed to live, and, according to latest reports, are in excellent condition, and in full flow of milk, after having given birth to healthy calves.

Of the 16 animals which were kept in the new stable and fed upon local hay which contained a considerable quantity of ragwort, 15 died of Pictou cattle disease between July 19th, 1904, and August 21st, 1905. I may add that to prevent the possibility of doubt as to the cause of death in these animals specimens from the internal organs of each were forwarded to Dr. Higgins, who verified the diagnosis in every case. The sixteenth animal, No. 12 of Dr. Pethick's report, was slaughtered on October 13th, 1905, and although to all external appearances healthy, the pathological examination of the organs showed a slight affection of the liver, and the presence of several characteristic ulcers on the lining of the true stomach.

Of the two other animals mentioned above, one of which was fed on chopped ragwort, and the other on oat straw, each receiving a small allowance of bran, the former died of acute hepatic cirrhosis on July 22nd, 1904, while the latter remained healthy during the entire test, and, when slaughtered on October 24th, 1905, was found to be absolutely free from the slightest appearance of disease.



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A calf six months old, born on the premises, was fed twice daily upon a mixture of one part of ragwort before flowering, and twenty parts of clean hay, reinforced by a daily ration of two pounds of fresh oats. This experiment, which was undertaken for the purpose of ascertaining if the weed would produce the disease at this stage of its growth, began on December 1st, 1904. The calf died on May 26th, 1905, post mortem and pathological examinations revealing an advanced stage of hepatic cirrhosis. The contact and inoculation experiments which are described in full detail in Dr. Pethick's report were absolutely without result, it being evidently practically impossible to transmit the disease from one animal to another.

In view of the results of these practical experiments, which have been carried on with the greatest possible care and exactitude, there need, I think, be no longer any doubt as to the cause of Pictou cattle disease, and I have, therefore, already recommended that it be removed at once from the list of affections dealt with under the Animal Contagious Diseases Act.

While subsidiary experiments conducted by Dr. Pethick show that some benefit undoubtedly results, especially in incipient cases, from the strychnine and iron treatment described by him in a previous report, measures of this kind are of little real value. The efforts of the local authorities and the stock owners in the affected district should at once be directed towards the eradication of the plant, which is undoubtedly the cause of the whole trouble.

Owing to the topographical and other conditions existing in the district, it will be quite impossible to get rid of the weed by cultivation, although, on arable land, much can of course be achieved by this means. There is, however, much rough and partially wooded country, most of which is badly infested with ragwort, to eradicate which by any ordinary methods will be practically impossible.

It has long been noted by intelligent residents that sheep seem to be able to eat the weed with impunity, although some hold that after a considerable period injurious effects are produced, which, if the diet is continued, eventually cause death. It is also held that, even where the plant does not prove fatal, the mutton is rendered unmarketable by a yellow staining, which after a time becomes distinctly noticeable.

As to one fact there is, however, no doubt, viz., that the keeping of sheep on land infested with ragwort is one of the most certain means of bringing about its complete eradication in a short time. This being the case, and in view of all the circumstances, I decided to inaugurate a series of experiments for the purpose of ascertaining whether or not sheep could profitably be utilized for this purpose. I therefore, early in 1905, authorized Dr. Pethick to purchase four sheep, which were kept during the summer on four acres of very weedy pasture, with the result as shown by the accompanying picture, of completely destroying the ragwort which formerly grew in profusion. So far, these animals have shown no symptoms of disease. Several other sheep were purchased a little later for the purpose of ascertaining at what stage, if any, the tissues began to exhibit the yellow stain to which reference has already been made. These animals have been slaughtered at intervals, and the flesh carefully examined, but no abnormal appearance has been so far observed.

The lease of the premises being for three years, I determined, with your permission, upon the conclusion of the experiments with cattle, to purchase a number of sheep, with a view to securing definite information on the points mentioned above. If it can be shown that sheep eat ragwort with impunity, and that no deleterious effects are produced upon the mutton, it goes without saying that they will constitute by far the most practical and profitable agency which can be used by the residents of the affected district in ridding their farms of this dangerous pest. The country in which the weed is found is one exceedingly well adapted for sheep culture, and I am convinced that the introduction to the district of this branch of husbandry at the present time, when both wool and mutton are increasing, and likely to increase in price, will prove highly profitable.



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As stated above, there is much rough pasture, while the arable land has, in many cases, been seriously impoverished by the crude methods of cultivation in vogue, and would be at once enriched and improved by the keeping thereon of a reasonable number of sheep. I therefore authorized the purchase, in November last, of forty sheep, which were divided into two lots, one score being fed during the winter on weedy hay, while the others were fed upon hay grown in the district but from which all ragwort had been carefully removed.

Eight goats were also purchased, four being placed with each lot of sheep. These animals have all wintered well, and it is my intention, as soon as pasture becomes available, to subdivide them again, keeping ten sheep and two goats of each lot on clean pasture, and a similar number on pasture badly infested with ragwort. By this means it ought to be possible to ascertain with a reasonable degree of certainty what are the actual effects of ragwort upon sheep, as well as to a certain extent also upon goats.

It might perhaps be advisable to continue this experiment even longer than is proposed, but I am in hope that by the close of the present season we will be in a position to give definite and reliable advice as to the utilization of these animals in stamping out ragwort, and with it the long dreaded Pictou cattle disease.

Concurrently with the above an experiment is being carried on with the view of fixing even more certainly upon ragwort the responsibility of causing hepatic cirrhosis. Three healthy young cows have been since November 1, 1905, fed on locally grown hay from which all weed has been removed, while three others are fed on similar fodder containing the ordinary quantity of ragwort usually produced in the meadows of the neighbourhood.

In January last also a disabled mare of little value was purchased, and is being fed twice a day on hay containing a large quantity of ragwort chopped fine and carefully mixed. This experiment is controlled by feeding a horse kept at the station on hay from which the weed has been entirely removed.

*Pictou Cattle Disease Statistics for the 12 months ended 31st October, 1905.*

Ninety-four animals valued at \$2,085 were slaughtered at a cost of \$1,390.

*Pictou Cattle Disease Statistics for the 5 months ended 31st March, 1906.*

Forty-seven animals valued at \$1,143 were slaughtered, at a cost of \$762.

## MANGE IN CATTLE.

It gives me much pleasure to be able to report a great improvement in the situation so far as concerns this troublesome malady which has existed among our range cattle to a greater or less extent for the past sixteen years. Shortly after my accession to office in 1902, I made it a point to be present at the annual meeting of the Western Stock-Growers' Association, which was that year, held at Macleod. After a full discussion it was decided to leave the matter of treatment in the hands of the cattle owners with the understanding that the services of our inspectors would be available in the event of it becoming necessary to deal with the animals of negligent or obdurate individuals. It appeared for a time that this method would be productive of good results, but the extreme prevalence of the disease during the winter 1903-04, together with other untoward circumstances showed the necessity for some sterner and more effective policy than had yet been inaugurated. Realizing the importance of securing the support and co-operation of the cattle owners, I held during the spring of 1904, a series of meetings at the principal centres within the infected area. At these meetings the whole subject was discussed in detail, with the result that it was finally decided to introduce a policy of compulsory and systematic dipping which should



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extend to all cattle owned within the somewhat extensive district where the disease was known to exist. The order thus suggested was issued on August 9, 1904, and called for the treatment according to certain specified conditions of all cattle within a definite area between 1st September and 31st October of that year. About the same time a comprehensive bulletin containing much information regarding mange and its treatment together with plans and specifications for the construction of dipping vats was prepared and distributed. The results were very gratifying. Dipping plants were constructed in almost every locality some being provided by individual owners while others were started by groups of small ranchers who combined their forces for that purpose. In four months the number of these establishments increased from two, and these both out of repair, to 196, which, almost without exception, were found to work smoothly as well as effectively. As a matter of fact upwards of 400,000 cattle were subjected to treatment during the time that the order was in force. The great majority of the owners were only too glad to comply with its provisions, although a number failed to do so with the result that their cattle and premises were placed under strict quarantine until the advent of Spring, when only, it became possible to subject them to treatment. The benefits of the new policy were soon fully apparent in the freedom from mange and generally improved condition of the cattle.

The following extract from the last annual report of the Western Stock-Growers' Association, which was unanimously adopted at the annual meeting of that body held at Medicine Hat on May 11th, 1905, speaks for itself:

'At the last annual meeting the principal topic of discussion was the measures that were necessary to be taken to prevent the further spread of cattle mange. It had come to be recognized that the existence of this contagious disease amongst the cattle throughout a widespread area was a potent fact that could not be disregarded any longer. Dr. Rutherford, on behalf of the Dominion Department of Agriculture, had made a few weeks previous to our last annual meeting a tour of the range country through which a series of meetings was held, his object being partly, no doubt, to educate those interested as to the serious nature of the conditions, and partly to obtain at first hand the ideas of the ranchmen themselves. The consequence was that at the annual meeting itself all were in a position to discuss the matter intelligently. The upshot of the discussion was, as most of you are aware, that the association recommended to the government that the compulsory dipping of all cattle within the affected area should be insisted upon. In due course an Order in Council was issued providing for this. The responsibilities thus thrown upon the stock-growers were heavy. Tanks had to be built, heating apparatus installed, sulphur purchased, extra men employed, and valuable time interfered with, while the organization necessary in connection required much consideration. Difficulties, in fact were many and delays numerous, but in spite of it all dipping was fairly general. There were a few isolated instances where no attempt was made to thoroughly carry out the regulations. As to the results there can be no two answers. It was an unqualified success. Mange has practically disappeared in those districts where the dipping was given a thorough trial. So satisfactory did the Executive Committee consider the results, that at a meeting held on 9th March last, the following memorial was addressed to the Dominion Government:

'That this meeting of the Executive Committee of the Western Stock-Growers' Association desire to put on record their satisfaction at the undoubted success resulting from the mange dipping operations of last fall, and to heartily endorse the action of Dr. Rutherford, who was instrumental in having the dipping regulations put in force. This committee is of the opinion that it is highly desirable and necessary that universal dipping should be again obligatory throughout the same district during the coming season.

'The whole country is now well equipped with dipping tanks, there being no less than 196 in existence, and future dipping operations should be simple compared with last year, when everything had to be bought and tested, and when all were unfamiliar with the proposition.'



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Steps were at once taken to meet the wishes of the owners, and the following order on lines similar to that of the previous year and differing from it only in regard to certain comparatively unimportant details was issued on July 10, 1905:—

Department of Agriculture.

Health of Animals Branch.

## MANGE.

*By Orders in Council dated July 10, 1905, and June 27, 1904.*

‘Whereas the disease of mange exists among cattle throughout those portions of the territories of Assiniboia and Alberta which may be described as bounded by the international boundary, the Rocky Mountains and a line drawn as follows:—

‘A line from the Rocky Mountains along the southeastern boundary of the Stoney Indian reserve, then along the northeastern boundary of the said reserve to the main line of the Canadian Pacific railway, thence easterly along the said line of railway to the line between ranges 5 and 6, west of the 5th meridian, thence north along that line to the line between townships 28 and 29, thence east along that line to the line of the Calgary and Edmonton railway, thence north along the Calgary and Edmonton railway to the line between townships 30 and 31, thence east along that line to the line between ranges 26 and 27 west of the 4th principal meridian, thence north along that line to the line between townships 34 and 35, thence east along that line to the Red Deer river, thence north along the Red Deer river to the line between townships 38 and 39, thence east along that line to the 4th principal meridian, thence south along the 4th principal meridian to the Red Deer river, thence along the Red Deer and Saskatchewan rivers to the line between ranges 7 and 8 west of the 3rd meridian, thence south along that line to the international boundary line.

‘And whereas it is of the greatest importance to the interests of stock owners and to the preservation of a profitable market for western cattle that the policy adopted last year (1904) with a view to the eradication of the disease in question should be continued.

‘That after careful inquiry and due consideration it has been decided that the period between August 15 and October 31 is the most suitable and convenient for treatment with the above object.

‘Therefore the Governor General in Council, in virtue of the provisions of section 29, chap. 11, 3 Edward VII., intituled “An Act respecting Infectious or Contagious Diseases affecting Animals,” is pleased to order that the above described tract of land shall be, and the same is hereby declared an infected place, and that all persons owning or being in charge of cattle within the above described tract must, during the said period, dip or otherwise treat such cattle in a manner satisfactory to the officers of the Department of Agriculture, provision being made that where it can be clearly shown to the satisfaction of the said officers that cattle, kept under fence in any well defined area or district within the said tract, are not affected with, and have not been in any way exposed to, the contagion of mange, or have been, during the present season, treated in a satisfactory manner and subsequently kept isolated from all other cattle, the veterinary director general may, on the facts being reported to him, exempt such area or district from such compulsory treatment, but this provision shall in no case apply to cattle kept on the open range, or on unfenced land.

‘Satisfactory treatment shall consist of immersion for not less than two minutes in a solution of lime and sulphur of a strength of not less than 10 pounds of lime and 24 pounds of sulphur to 100 gallons of water prepared according to the directions of the officers of the Department of Agriculture.

‘When approved by the inspector in charge of the district in which the cattle to be dealt with are kept, persons owning or controlling herds of not more than thirty head may be permitted to treat their animals by hand, in which case the following preparation shall be used:—



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‘ Sulphur. . . . .	2 pounds
Oil of tar . . . . .	8 ounces
Raw linseed oil. . . . .	1 gallon

‘ In either case the fluid shall be applied at a temperature of not less than 105° nor more than 110° Fahrenheit, and the treatment shall be repeated after an interval of not less than ten nor more than fifteen days.

‘ In the event of any owner failing to treat or to make satisfactory preparation for the treatment of his cattle on or before October 15, the provisions of the Order in Council dated June 27, 1904, regarding compulsory treatment as quoted below, shall be enforced.

‘ The Governor General in Council is further pleased to order that no cattle shall be removed or be allowed to move out of the hereinbefore described tract unless they are accompanied by the certificate of an inspector of the Department of Agriculture stating that they have been examined by him and found free from contagion of mange. Any such cattle, however, shall, if deemed advisable by the inspector, be detained, dipped, sprayed or otherwise treated in such manner as the veterinary director general may, from time to time, prescribe.

‘ No railway company shall accept or load any shipment of cattle at any point within the said tract except for immediate slaughter as hereinafter provided unless such shipment is accompanied by the certificate of an inspector.

‘ At points where cattle originating in the said district are unloaded they shall be placed in special yards, and such yards shall be used for no other purpose, and shall be cleansed and disinfected when so ordered by an inspector.

‘ All cars and other vehicles used for the carriage of such cattle shall be cleansed and disinfected to the satisfaction of an inspector as soon as possible after being unloaded and before being used for any other shipment.

‘ All way bills and bills of lading accompanying shipments of cattle originating within the said tract shall have plainly written or stamped across the face thereof a notification that the said cars are to be cleansed and disinfected immediately after being unloaded.

‘ Cattle affected with, or which have been exposed to the contagion of mange, may be shipped for immediate slaughter to points within the above described tract under the following condition:—

‘ (1) Unless loaded through special yards and chutes reserved exclusively for such shipments, all yards and chutes used by them shall be declared infected places, and shall not be again used for the shipment of healthy stock until cleansed and disinfected to the satisfaction of the inspector; they shall not be allowed to **come in contact** with other animals; they shall be consigned direct only to such slaughter houses within the hereinbefore described tract as are provided with private yards and chutes; shall not be unloaded at any point en route and shall under no pretext whatever be removed alive from the slaughter house or the yards and premises immediately connected therewith.

‘ (2) Cars conveying such cattle shall be cleansed and disinfected to the satisfaction of an inspector immediately after being unloaded.

‘ That the transit of cattle through the said tract is permitted subject to the following regulations:—

‘ (1) Cattle for transit by rail through the said tract from one part of Canada to another shall, at points where unloading is necessary, be placed in yards reserved for their exclusive use, and shall not be permitted to come in contact with cattle which have originated within the said tract.

‘ (2) Cattle imported from the United States into the said tract destined for points in Canada outside thereof may, under compliance with the quarantine regulations, and with the provisions of the next preceding section hereof, be permitted to



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pass without unnecessary delay through the said tract direct to their destination without further restriction.

‘Every veterinary inspector, and every person duly authorized by a veterinary inspector, shall have full power to order animals affected or suspected of being affected with mange to be collected for inspection, and, when necessary, to be detained, isolated or treated in accordance with the instructions of the veterinary director general.

‘The expenses of and incidental to such collection, isolation and treatment shall be borne by the owners of the animals, and if advanced by the inspector or other authorized person shall, until paid, be a charge upon the said animals, without prejudice however to the recovery of any penalty for the infringement of these regulations.

‘If such expenses are not paid within twenty days of the time when they have been incurred, the inspector or other duly authorized person may proceed to sell the said animals by public auction after giving to the owner ten days’ notice in writing of such intention to sell, which notice may be effectually given, where the owner is known, by delivering the same to him personally or by sending it by mail addressed to him at his last known place of residence. Where the owner is unknown, such notice may be effectually given by publication in one issue of a newspaper published or circulating in the district where such animals are detained. The proceeds of such sale shall be applied first in payment of the reasonable expenses of the collection, isolation, treatment, giving of notice and conduct of sale, and the balance, if any, shall be paid to the owner of said animals on demand. Any balance not so paid shall be remitted to the minister, and if not claimed within twelve months from the date of sale shall be paid to the credit of the Receiver General.

‘The amount charged for the treatment of stray cattle, or of cattle whose owners neglect or refuse to comply with the above orders, so far as they refer to treatment, shall in no case exceed twenty-five cents per animal for each dipping or application, provided that where it is necessary to collect such animals and to hold them for the second dipping or application, an additional sum of one dollar per animal may be collected.

‘The department assumes no responsibility for injury or loss to cattle incurred through compliance with the provisions of these orders as regards treatment.

‘All persons engaged in breeding, exporting, dealing in, driving or shipping cattle, and all transportation companies, are requested to co-operate with this department in enforcing the above provisions.

‘Outbreaks occurring outside of the area defined above will be dealt with under the general order in council dated June 27, 1904.

‘J. G. RUTHERFORD,

‘Health of Animals Branch,

‘*Veterinary Director General.*

‘Department of Agriculture,

‘Ottawa, July 11, 1905.’

The same system was followed in its enforcement, the territory being divided into thirteen districts, each in charge of a qualified veterinary inspector having under his supervision a sufficient number of deputies to permit of the work of treatment being closely watched and so kept up to the standards provided for by the order.

For reasons explained fully in my last report the use of a standard lime and sulphur dip was again made compulsory, the only exception to this rule being at the vat of Mr. John Lineham who obtained special authority to use crude petroleum from one of the new Alberta wells. Mr. Lineham was very anxious to have an opportunity of testing the efficacy of this oil as a cure for mange owing to the fact that certain crude oils from the Beaumont fields in Texas are being used with good effect in the treatment of mange as well as in the destruction of ticks. The oil dipping was in this instance permitted on condition that the owners assumed all risk of injury or death to the animals dipped, a very necessary precaution in view of the untoward results following the use of some kinds of crude oil in experiments conducted by the American



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authorities. As an additional precaution and with the purpose of securing reliable information for our future guidance, a qualified veterinary inspector was detailed to watch the dipping at Mr. Lincham's vat. His report states that, while the oil was not in any way injurious to the cattle, it failed to cure several out of a number of affected animals which were subjected to this treatment. This is regrettable as the use of oil is much less troublesome and laborious than that of the lime and sulphur preparation.

One application of the Beaumont oil above-mentioned at an ordinary temperature is generally efficacious; on the other hand the lime and sulphur dip has not only to be maintained at a high temperature, but, in order to effect a certain cure, should be applied a second time after an interval of ten or twelve days. The latter limitation is a very serious one as may be readily seen when the difficulty and inconvenience of holding large herds for the second dipping are taken into consideration. While in Texas recently, I made full inquiry as to the special oil above referred to, and am now arranging to bring in a limited quantity for experimental purposes, although I fear that the combined burdens of freight and duty will render it too expensive for ordinary use.

The order of 1905 was enforced even more thoroughly and generally than that of 1904, and its results have been, in a corresponding degree, more satisfactory.

Five hundred and forty-seven thousand seven hundred and five cattle were submitted to treatment, 422,805 having been dipped a second time. In a country of such extent, however, the difficulties connected with the enforcement of an order for universal and compulsory treatment are almost insuperable and therefore, with the object of avoiding, if possible, the necessity of repeating it this year, I retained the services of a number of experienced cattle men, who have, during the past winter, been riding the range for the purpose of detecting any incipient cases of mange and arranging with owners for their immediate isolation and treatment. These men furnish regular reports which indicate that, while the disease is not yet entirely stamped out, the results of our efforts during the past two seasons are highly satisfactory and that by the exercise of close and careful attention it will be possible in the near future to effect its complete eradication.

I am satisfied that with the experience which they have now gained of the benefits resulting from intelligent and systematic methods of treatment, owners will never again permit their cattle to suffer from mange as they have done in the past, especially as by the erection of dipping plants they have now at hand the means of dealing with the disease in an economical and effective manner. Many ranchers who were at first strongly opposed to dipping are now among its most enthusiastic advocates having found that it adds greatly to the thrift of stock, even when free from mange, by ridding them of lice and other injurious parasites. A remark frequently heard nowadays in the range country is that "A good vat is better than a big hay stack," and numbers of cattle men have assured me personally that they will dip their stock at least once a year whether the department orders them to do so or not.

Another great advantage resulting from the present policy is that whereas it was formerly a matter of great difficulty to secure information as to the existence of mange in a district or the ownership of affected cattle, it is now the business of every man who has gone to the trouble and expense of treatment, to see that diseased animals are properly and promptly dealt with. This very natural tendency towards self protection is rapidly developing into a general public sentiment of the greatest value to our officers in enabling them to get early information as to the whereabouts of infected or suspected animals, as also in enforcing quarantine when such action is found necessary.

I cannot leave this subject without a reference to the very unfair manner in which the British agricultural press has attempted, during the recent controversy on the removal of the restrictions against Canadian cattle, to create a prejudice regarding our stock because of the existence in this one district of a simple, and under ordinary conditions, easily treated skin affection. Psoroptic mange of cattle is well known in



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Great Britain and any one posing as an authority on live stock matters who refers to it as a malady likely to inflict serious loss or injury on the cattle industry of that country is deficient in ordinary intelligence or, what is more likely in this particular instance, common honesty. It is a disease which yields readily to simple treatment, being in fact very much more easily cured than the troublesome ringworm with which British and especially Irish cattle are so often affected. On ordinary farms and among domestic cattle properly handled its appearance causes to the intelligent owner neither alarm nor loss, though it may induce in him, as in the affected animal, a slight, temporary sensation of annoyance. If the conditions in Alberta were similar to those in Britain or in our older provinces the existence of cattle mange would be of very little importance either to the owners or to the authorities, but among thousands of semi-wild cattle ranging without restriction over hundreds of miles of open country and depending for their sustenance during the whole year on grass alone, it is an entirely different matter, and one which can only be dealt with by special measures. Opponents of Canadian cattle in Britain, both in the press and on the platform, have quoted the figures given in my last year's report of the number of cattle treated as if they referred to animals actually affected, although the facts are so apparent that a wayfaring man, though a fool, should be able to comprehend them. As a matter of fact not more than five per cent of those treated were showing any evidence of disease, the dipping being made compulsory and universal as a general preventive measure, having in view the possibility of future infection through unrestricted contact on the open range. Again much was made of the statement that a number of animals were dipped a second time. Although the accompanying text of the report showed that this also was universal, and that at the date of writing only a certain number had undergone the second treatment, it was sought to convey the impression that these animals were so dealt with because badly affected when in all likelihood the most astute British protectionist would have been unable to find a single acarus in the lot.

Every possible precaution is taken to prevent the shipment of any animal in the slightest degree affected. Cattle intended for export are submitted to a rigid veterinary inspection on leaving the district, are again carefully examined at Winnipeg, and finally pass through the hands of our experienced and reliable staff of export inspectors before they are permitted to leave the Dominion.

*Cattle Mange Statistics for the 12 months ended 31st October, 1905.*

In the Northwest 99 bands of cattle were quarantined, involving the control of 16,266 cattle.

In Ontario 180 were quarantined at Prescott, several being detected as mangy.

In Quebec 1 animal was detected and 9 quarantined in consequence.

*Mange Dipping, 1905.*

District No.	1st Dip.	2nd Dip.
1.. . . . .	67,517	35,208
2.. . . . .	53,372	52,890
3.. . . . .	7,814	3,179
4.. . . . .	14,744	6,160
5.. . . . .	56,354	41,834
6.. . . . .	31,519	18,801
7.. . . . .	52,829	47,921
8.. . . . .	29,411	24,575
10.. . . . .	66,083	65,354
11.. . . . .	57,403	41,341
12.. . . . .	54,878	50,753
13.. . . . .	21,916	20,582
14.. . . . .	33,865	14,207
	<hr/> 547,705	<hr/> 422,805



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*Cattle Mange Statistics for the 5 months ended 31st March, 1906.*

In the Northwest 53 bands of cattle were quarantined, involving the control of 21,069 cattle.

## MALADIE DU COÛT.

It is somewhat difficult to make a definite report with regard to this disease, as owing to its exceedingly insidious nature and the difficulty of diagnosis in the earlier stages, it is possible for it to exist undetected for a considerable time in districts where its presence is altogether unsuspected.

As stated in my last report, the presence of maladie du coût in Canada was first discovered in March, 1904, when Inspector Burnett, chief veterinary officer of the Royal Northwest Mounted Police, reported its existence in a stallion and several mares, the property of Mr. W. T. McCaugherty, residing near Lethbridge.

In the course of the investigation, which was immediately thereafter inaugurated, I decided, in order to eliminate any doubt as to the nature of the disease, to ask Dr. Salmon, then Chief of the Bureau of Animal Industry at Washington, to be good enough to instruct one of his inspectors familiar with maladie du coût to visit Lethbridge for the purpose of examining the suspected animals. In response to this request, Dr. Salmon dispatched to the scene Dr. E. T. Davison, of Rushville, Nebraska, an experienced inspector, to whom had been entrusted the work of dealing with maladie du coût, in South Dakota and other western states. Dr. Davison had no hesitation in confirming my diagnosis of maladie du coût and so reported to Dr. Salmon under date May 14, 1904.

The identity of the disease having been thus established, it remained for the department to decide upon the adoption of a definite policy, having in view its early and effective eradication.

Maladie du coût, or dourine, is a remarkable disease, inasmuch as while it has been the subject of research and investigation for upwards of a century, scientists have not yet been able to agree as to its true nature or the best means of dealing with it.

As an indigenous disease in Asia and northern Africa, it appears, in these countries, to run a definite course, which as a rule terminates fatally after the lapse of a period of from three months to three years.

In Europe, however, and also in America, its behaviour is much more uncertain and irregular, a feature which, while perhaps not without its advantages in individual cases, tends to complicate and render more difficult the task of dealing with it in a prompt and effective manner.

Owing to the fact that at the time the existence of the disease was discovered in Alberta, there was no provision for the payment of compensation to owners whose horses might have been slaughtered, I thought it best to establish a quarantine station in which the suspected animals might be detained under observation, with a view to the destruction of those which might prove to be undoubtedly affected. This was accordingly done, and in this station were placed the diseased animals discovered in the first instance, together with a number of others picked up during the summer of 1904 by inspectors specially engaged for that purpose. A few small lots were also quarantined on the premises of their owners.

On making a second inspection of the suspected animals in the early fall, I was surprised to find that the disease had not developed to any serious extent, even among some of the cases which were most clearly marked in the previous spring. Being anxious to give the suspects the benefit of any possible doubt, and being also desirous of acquiring as much information as possible as to the behaviour of the disease in what was to it an entirely new habitat, I decided, instead of slaughtering any of these



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cases, to keep them under observation for a further period, and arrangements were therefore made to continue the quarantine throughout the winter.

In May, 1905, I again visited Lethbridge, accompanied on this occasion by Dr. Burnett, chief veterinary officer of the Royal Northwest Mounted Police. Dr. Hargrave, of Medicine Hat, Dr. Warnock, of Pincher Creek, Dr. Higgins, our pathologist, as well as several other inspectors of the department.

On making an examination, it was found that in a considerable number of the quarantined mares the disease had made marked progress, while in others but little change from the conditions shown on previous occasions was noticeable, although the number of those unquestionably free from disease was very small indeed. Several of those in which the symptoms were well marked were slaughtered, the post mortem examination held in each case showing clearly that the animals were undoubtedly affected with *maladie du coït*.

Proceeding cautiously, and making a careful autopsy on each animal as it was killed, some 116 head were destroyed. A considerable number, however, in which the symptoms were not sufficiently well defined to justify me in ordering their slaughter, were quarantined, some at the station and others on the premises of their various owners. Three of our inspectors, namely, Burnett, Hargrave and Warnock, each of whom had had special opportunities to familiarize himself with the disease, were authorized, under the new regulations issued in July, a copy of which is printed herewith, to order the slaughter of any clearly marked cases which might be brought under their observation.

During the summer a number of outbreaks were dealt with by these gentlemen in various parts of Southern Alberta.

In September I again visited the quarantine station, and after examining a number of animals there, decided to slaughter all except a very few, which after having been retained under observation for upwards of twelve months appeared, so far as I could judge, to be quite healthy.

At this time also, in addition to the officers already mentioned, I authorized Dr. Gallivan, of Lethbridge, to order the slaughter of affected animals, and to deal generally with any outbreaks of the disease which might be reported to him. At the same time, in consideration of the fact that, as stated above, the knowledge of this disease possessed by the veterinary profession, even among those who have had most experience with it, is very far from complete, I, with the approval of the minister, arranged for the utilization of the existing quarantine station at Lethbridge for experimental work. A house and stable were erected in close proximity to the corrals, and within the fenced inclosure of 1,800 acres which had been provided the previous year, and Dr. Hadwen, our inspector at Nelson, B.C., a gentleman who has given considerable attention to pathological research work, was placed in charge, a number of condemned animals being left at his disposal.

A bulletin furnishing a description of the symptoms has been widely distributed among farmers and horse-breeders in the West and elsewhere, with the view of enabling them to more readily recognize the disease should it make its appearance among their animals.

So far the information at present in the possession of the department would indicate that the disease is with one exception, viz., at Rush Lake, Saskatchewan, confined to Southern Alberta, where it unfortunately exists in several different localities. Of the various outbreaks discovered, some are traceable without much difficulty to animals infected while running on the range near Lethbridge, where the disease, as already stated, was first recognized in Canada. The actual starting point of the infection in this case has never been discovered, although there can be no reasonable doubt that it originated among animals imported from some of the infected districts in the North-Western United States. Of the other outbreaks, one is traceable to horses brought from Utah, another to an importation from Oregon, while in a third case strong suspicion attaches to a band of mares purchased in Montana.



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It is only fair to say that the United States authorities as well as those of several of the individual states, have reported after investigation, that they have been unable to find the disease in any of the districts where the suspected animals originated. The evidence in our possession, however, has an entirely contrary bearing on the case, and when one remembers the remarkably insidious nature of the disease, and the fact which is undeniable, that it has existed to a greater, or less, extent on the open range, in several of the Western States for an indefinite period, the reasonable inference is that the presence of *maladie du coït* in Alberta is due to infected mares or stallions imported by persons, let us hope, ignorant of the terrible scourge which they were introducing among Canadian horses.

As already indicated, it is almost impossible for even an experienced and skilful veterinarian to diagnose *maladie du coït* with any certainty during its earlier stages and when, in addition, it is remembered that individual cases, especially mares, remain infected for years, while showing practically no visible evidence of disease, it is not surprising that among the many thousands of horses brought across the line since the rush of settlement began, there should have been some bearing the germs of this loathsome malady.

The difficulty of diagnosis remarked upon and regretted by those familiar with *maladie du coït* in every country where its presence has been noted, is accentuated in America by two peculiar and so far, unexplained circumstances. One of these is the fact that the *Trypanosoma Rougeti*, or as it is sometimes styled *Equiperdum*, which has been detected in the blood and other fluids of affected animals in Asia, in Africa, and latterly, though with less regularity, in Europe, has never, so far as I am aware, been recognized on this continent. The constancy of this organism, easily demonstrated by Lingard in India, and by Buffard and Schneider in Algeria, in both of which countries the disease is thought to be, and probably is, indigenous, was until last year, questioned by leading investigators in Europe, notably by Marek, Kern and Huttyra, in Hungary. Early in 1905, however, Buffard and Schneider were able to demonstrate its presence in French cases, and about the same time it was also recognized by Marek, thus corroborating the work of Nocard and Leclainche, who had previously identified the organism.

Owing to the interest attaching to this phase of the question, I have thought it well to publish herewith a translation of the report of Messrs. Buffard and Schneider, which appeared in the annals of the Pasteur Institute for November, 1905. The other peculiarity observed in this country is the apparent mildness of the infection in many cases. In Asia and in Africa, *maladie du coït* or dourine, as it is there generally termed, seems, from all accounts, to run a definite course, the symptoms throughout being fairly well marked and the termination almost invariably fatal within a period of three years at most.

In America, on the other hand, the infection is frequently much less virulent, many cases, especially in mares, being so slightly marked as to attract little or no attention, while some apparently tend towards recovery. Whether or not such cases would eventually regain the normal condition, and especially, whether they would become non-infective, our experience in Canada has hitherto been too short to permit of my offering any opinion.

Available reports regarding *maladie du coït* in Southern Europe indicate that this tendency to mildness of attack and generally impaired malignity is also observable there, although perhaps to a less degree than in America.

When in considering these facts we remember that the apparently specific *trypanosoma*, constant and easily isolated in those tropical countries where *maladie du coït* has its natural habitat, is exceedingly difficult of detection in Europe, and so far has been found not at all in America, it surely affords some ground for the hope hinted at in my report for 1904, that in our Northern and notably healthy climate the disease may prove to be actually less destructive than we at present fear.



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The experiments already referred to are being conducted in the hope of obtaining a more thorough knowledge than we at present possess regarding this and various other matters pertaining to the disease.

A number of mares of the doubtful class mentioned above are being held under close observation. Breeding experiments with stallions both healthy and diseased will be systematically carried on, and the various results carefully noted. It is also my intention to remove the ovaries from several of the experimental mares, it having been found that stallions castrated in the early stages occasionally recover and become useful work horses. Whether or not similar beneficial results will follow the corresponding operation in the female remains to be seen.

In addition to these practical experiments, Dr. Higgins here, and Dr. Hadwen at Lethbridge, are engaged in a close study of the pathological conditions presented by the diseased animals.

In order to give the former an opportunity of working to advantage, I last fall brought to the biological laboratory three infected mares. Of these one succumbed to the disease in December, but the others, although they were among those examined and pronounced diseased by Dr. Davison two years ago, are still alive, one being apparently but little the worse, although the other is evidently breaking down.

Despite all that I have said, it would, in view of the history of this scourge in other countries, be unwise to relax in the slightest degree our efforts to effect its eradication, especially as it is at present, so far as known, confined to a comparatively limited area.

The task, however, is a delicate and difficult one owing to the uncertainty attending diagnosis and the loose conditions which characterize breeding operations on the western ranges.

The expenditure to date in compensation for horses slaughtered, while undoubtedly considerable, is a mere trifle in comparison with the appalling losses sustained in countries where *maladie du coit* has been permitted to spread unchecked.

The following are the figures:—

	Killed.	Value.	Compensation.
1904-05.. . . . .	292	\$24,045 00	\$16,029 94
1905-06.. . . . .	120	10,210 00	6,806 48
<hr/>			
Total.. . . . .	412	\$34,255 00	\$22,836 42
November 1, 1904, to October 31, 1905.			
Post Office.	Outbreaks.	Slaughtered.	Suspected.
Seven Persons . . . . .	7	8	17
Macleod.. . . . .	1	1	..
High River.. . . . .	3	37	4
Spring Point.. . . . .	2	2	6
Little Plume.. . . . .	10	36	33
Medicine Hat.. . . . .	31	51	92
Gleichen.. . . . .	1	1	..
Irvine.. . . . .	1	1	..
Coleridge.. . . . .	1	1	..
Woolchester.. . . . .	3	2	4
Eagle Butte.. . . . .	4	1	6
Lethbridge.. . . . .	4	1	3
Cardston.. . . . .	4	34	2
Quarantine grounds, Lethbridge.. . . .	..	116	..
<hr/>			
	72	292	207



November 1, 1905—March 31, 1906.

District.	Outbreaks.	Slaughtered.	Suspected.
Little Plume.. . . . .	2	7	5
Seven Persons.. . . . .	2	5	2
Cardston.. . . . .	3	4	8
Medicine Hat.. . . . .	5	18	2
Taylorville.. . . . .	1	15	4
Brunton.. . . . .	1	2	..
Lethbridge.. . . . .	3	4	15
Rush Lake.. . . . .	1	7	..
Nanton.. . . . .	1	1	..
Calgary.. . . . .	1	1	..
Macleod.. . . . .	2	2	1
Stirling.. . . . .	3	8	35
Spring Point.. . . . .	1	1	6
Millarville .. . . . .	1	1	..
High River.. . . . .	3	35	3
Willow Creek.. . . . .	1	6	..
Tabor.. . . . .	1	2	3
Raymond.. . . . .	1	1	..
Peigan Creek.. . . . .	..	..	1
Okotoks.. . . . .	..	..	6
Magrath.. . . . .	..	..	19
Lineham.. . . . .	..	..	2
	33	120	112

The following amended regulations were authorized by Order in Council dated the 22nd day of July, 1905, in virtue of ‘The Animal Contagious Diseases Act 1903’ :—

‘1. No animal which is affected, or suspected of being affected, with *Maladie du Coit* shall be permitted to run at large or to come in contact with any animal which is not so affected, and no such animal shall, in any case, be used for breeding purposes.

‘2. Any Veterinary Inspector may declare to be an infected place within the meaning of “The Animal Contagious Diseases Act, 1903,” any common, field, stable or other place or premises where animals are found which are affected or suspected of being affected with *Maladie du Coit*.

‘3. No animal shall be removed out of an infected place without a license signed by an Inspector.

‘4. The Veterinary Director General may, from time to time, order the slaughter, castration, or other disposition of animals affected with *Maladie du Coit*.

‘5. Every Veterinary Inspector shall have full power to order animals affected, or suspected of being affected with *Maladie du Coit* to be collected for inspection, and, when necessary, to be detained and isolated or otherwise dealt with in accordance with the instructions of the Veterinary Director General, and no indemnity shall be allowed to the owner in case of damage arising out of or resulting from such actions, except as hereinafter provided.

‘6. The expenses of and incidental to the collection, isolation, seizure, castration or otherwise dealing with horses for the purposes of these Regulations shall be borne by the owners of the animals.

‘7. No entire horse or ridgling more than one year old shall be permitted to run at large on unfenced lands in the Province of Alberta or in that portion of the Province of Saskatchewan lying west of the third principal Meridian.



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'8. Any entire horse or ridgling more than one year old found running at large within the area defined above may be seized and held on the order of any duly authorized Veterinary Inspector of the Department of Agriculture, who shall forthwith whenever possible notify the owner of the said horse of such seizure, and the said horse, if not claimed within thirty days of such seizure, may be castrated, and no indemnity shall be allowed to the owner in case of damage arising out of or resulting from said castration, seizure or detention.

'9. Animals affected with *Maladie du Coit* may, on an order signed by a duly appointed Veterinary Inspector acting under special instructions from the Veterinary Director General, be forthwith slaughtered, and the carcasses disposed of as in such order provided, and compensation may be paid to the owners of such animals if and when the Act so provides.

'10. Before an order is made for the payment of compensation in any of the cases aforesaid there must be produced to the Minister of Agriculture a satisfactory report, order for slaughter and certificate of valuation and slaughter, all signed by an Inspector.

'J. G. RUTHERFORD,  
*Veterinary Director General.*

'Health of Animals Branch,  
'Department of Agriculture,  
'Ottawa.'

## THE IDENTITY OF DOURINE.

*Buffard and Schneider.*

Even until recently some doubt appeared to exist regarding the presence of a specific trypanosome in the dourine of Europe. We have successively seen Thanhoffer, Lidemann and Marek in Hungary, and Tchernogorow in Russia declare that they have not been able to reveal the presence of trypanosomata in subjects infected with authentic dourine. Prof. Marek was even led by his negative evidences to admit the existence of two dourines, one due to a trypanosome being seen in Algiers, the other, of which the causal agent was still to be determined, constituting the European affection. A certain tendency to consider this double theory plausible has since been manifested in some scientific circles, and in some medical literature.

We have, from the first, held firmly that the Algerian trypanosomiasis was actually the true dourine or 'mal du coit' that which was studied by Signol, Saint Cyr, Trasbot, Laquerriere, Blaise, Nocard, Rouget, ourselves, and, as supporting our conclusions, Nocard, Martinet and Bremond, who carried on an experimental dourine farm after examining some animals which served as our proofs that dourine was of trypanosomian origin. In all that concerned the possibility of a dourine or of a European pseudo-dourine, we maintained the greatest reserve, having regard to the difficulty of the bacteriological diagnosis of dourine on the one hand, and to the small number of inoculations or their entire absence in the apparently negative cases. The facts have since, as it appears to us, solved the question both in France and Hungary. In France dourine makes its appearance nearly every year upon the Spanish frontier, in the Department of the Lower Pyrenees. The mares of the districts near the frontier are sent during the summer into pastures common to France and Spain, where they are served by stallions which are often affected with dourine. Many owners, however, act as do the Arabs, that is to say, that they first have a mare served by a jackass, then if she does not hold they send her to a stallion. The jackasses perform service on both sides of the frontier and most frequently infect the mares, which in their turn, infect the stallions of the national breeding studs, or those owned by private parties. Nay more, through purchases made in Spain, mares probably infected are frequently



introduced into France ; the enzootic outbreak of 1903, was thus caused by Spanish mares brought into France.

In 1886, 34 mares and 4 stallions died in the canton of Accous; in 1890 some cases were observed in the valley of Aspe; in 1898 the stallion Kars of the national stud at Pau infected 37 mares. In 1903 many mares had, in fact, already succumbed to mal du coït when the sanitary service was advised of the situation; it was only possible to find two private stallions affected which succumbed shortly afterwards. In 1904 the national stallion 'Lusignan,' was sent for observation to the veterinary school at Toulouse on suspicion of dourine, because of symptoms which he presented, and which consisted principally of an extensive odema of the sheath and scrotum. Latterly he presented on the sides, on the neck and on the croup rounded protuberances having the character of hematomas which appeared and disappeared at irregular intervals. Some lameness of the hind limbs supervened accompanied by paralysis of the crural muscles and loss of power in the hind quarters. This stallion finally recovered. Different inoculations with fresh blood were in very large doses administered to dogs and rabbits, but gave no result. Microscopic examination of the blood was constantly negative. This stallion having served 37 mares, Professor Leclainche willingly invited us to examine them at certain places where they were collected. Four mares were declared dourine suspects. The symptoms which they presented were vague enough, but the stallion which had served them presented such evident signs of dourine that less could not be done than to put them under the supervision of the sanitary service. Blood taken from the tip of the ear and from the vagina of two of these mares showed after long and minute examination some very sparse trypanosomes. A dog and a rabbit received respectively the first 50 c.c., the second 20 c.c., of blood from the jugular of another of these suspected mares. The rabbit died some days afterwards from septicaemia. On the dog, which was carefully watched every day, there appeared on the seventh day, at the point of inoculation, a swelling about the size of a hazel nut in the sero-sanguinous fluid of which we found trypanosomes in sufficient numbers which we submitted to the confirmatory examination of Messrs. Leclainche and Laveran. To this swelling, supervening at the point of inoculation, the symptoms of dourine in the dog were confined.

Let us add that three of the mares declared suspected by the sanitary commission died after having presented the typical symptoms of dourine. A private stallion was also castrated for dourine in the same district as that in which the affected mares lived. We desire above all to deduct from this enzootic, interesting on more than one account, the difficulty of bacteriological diagnosis and the positive discovery of the *Trypanosoma Rougeti* in the dourine of France.

In Hungary, after having failed for a long time in his search for the trypanosome, Prof. Marek has finally found it in the blood of a stallion affected with dourine and has willingly announced to the International Congress of Veterinary Medicine at Buda Pesth, that he would withdraw the reservations which he has expressed on the subject of a specific trypanosome in Hungarian dourine.

We will not close this note without tendering our hearty thanks to Prof. Leclainche for the great obligation he has rendered us in facilitating our researches and in permitting us to demonstrate the single nature of dourine.

### MANGE IN HORSES.

I am glad to be able to report that, in consequence of the stringent measures adopted for its suppression, mange in horses has entirely disappeared from many districts where it formerly prevailed to a greater or less extent. In the eastern provinces and in Manitoba, the work of our inspectors has of course been much simplified by the comparative ease with which the disease can be treated among domesticated animals. On the western ranges the dipping plants, established in conformity with the provisions of the compulsory cattle dipping orders, have been largely instrumental



in bringing about its eradication. The lime and sulphur mixture used in dipping cattle is equally effective in curing that variety of scabies which affects horses and the numerous conveniently situated vats were consequently utilized in its treatment with most gratifying results. Isolated cases are still found here and there, but they are few in number and being, as a rule, detected early and dealt with promptly, the disease has but little opportunity to spread. The majority of owners are now much more fully alive than formerly to the importance of keeping a close watch on their horses with the view of detecting in the early stages this and other diseases to which they may be exposed. They have learned that breeding or buying horses to let them die of disease is not a paying proposition and that the old slip-shod range methods are not conducive to money making under present conditions. In some cases the educative process has been rather costly, but if the lesson is once thoroughly learned that on the range, as elsewhere, it pays to treat horses well and to look after them properly our western horse breeding industry will in future be much more prosperous and profitable than it has been in the past.

Statistics for period between November 1, 1905, and March 31, 1906.

	Outbreaks.	Animals Affected.
Northwest Territories.. . . . .	121	423
Ontario.. . . . .	29	40
Quebec.. . . . .	170	248
Manitoba.. . . . .	12	47
New Brunswick.. . . . .	8	8
Yukon.. . . . .	3	16
British Columbia.. . . . .	1	1
	<hr/>	<hr/>
	344	783

SHEEP SCAB.

With the exception of one outbreak in Southern Alberta, and another in British Columbia, both due to imported sheep, and a few isolated cases in Ontario and Quebec, all of which had been promptly and, so far as it was possible to judge, effectively dealt with, the Dominion had been for some years practically free from sheep scab. Most of the outbreaks in Ontario had been brought to the notice of the department through the agency of the veterinary inspector, who, since 1902, has been entrusted with the supervision of the animals passing through the markets at Toronto, so that no particular surprise was felt when, in November, 1904, that officer reported the existence of the disease in a consignment of sheep from Chatsworth, Ont. The matter was at once taken up, one of our inspectors being instructed to proceed to Chatsworth immediately and investigate the circumstances, with a view to taking such steps as might prove necessary to keep the disease under control. Before his report came to hand, however, a letter was received from the Chief of the Bureau of Animal Industry at Washington, stating that a consignment of Canadian sheep originating in Thamesville, Ont., and which arrived in Buffalo, N.Y., on November 26, were affected with scab. Investigation failed to locate the origin of the disease in this instance, although the fact that a number of the farmers from whom the sheep in question were purchased had sold out their entire stocks was rather suspicious.

Under date of December 21st, Dr. Salmon again reported the discovery at Buffalo of two consignments of scabby sheep among the bonded Canadian animals intended for exportation to Europe. These shipments, which also came from western Ontario, were very naturally objected to by the American authorities, who intimated that they were seriously considering the necessity of requiring Canadian sheep intended for



immediate slaughter, or for export, to be inspected and certified to in the same manner as sheep for breeding, grazing or feeding purposes. Realizing to the full the seriousness of the situation, I sent as many of our qualified inspectors as could be spared into the districts from which the infected animals had come, with instructions to make a thorough and careful examination of all sheep wherever found. At the same time I asked Dr. Salmon to suspend judgment until such time as it was possible to ascertain the actual conditions. The results of our investigation were somewhat discouraging, showing, as they did, that sheep scab existed in a very large number of flocks chiefly in the county of Middlesex, although outbreaks were also discovered in the counties of Lambton, Huron, Kent, Wentworth, Lincoln, Perth, Grey, Frontenac, Lennox, York, Haldimand and Norfolk, in Ontario, as also in the county of Berthier, in Quebec. The majority of these outbreaks were traced to a common origin in a herd of breeding sheep, the disease having been conveyed through the agency of individual animals sold for use in other flocks.

In every case where the existence of disease was discovered the affected animals were placed under strict quarantine; while, after the discovery of the infective centre above referred to, a number of flocks were placed under restrictions because of suspicion attaching to animals recently purchased by their owners, although showing no actual evidence of disease.

To remove any doubt as to the powers of inspectors and for purposes of general information, it was thought best to amend and bring up to date the regulations relative to sheep scab made under the authority of the Animal Contagious Diseases Act. This was accordingly done and the regulations in question, amended as follows, were distributed widely throughout the country:—

#### REGULATIONS RELATING TO SHEEP SCAB.

*‘By Order in Council dated 31st March, 1905, in virtue of “The Animal Contagious Diseases Act, 1903.”*

‘1. No sheep which is affected with or has been exposed to sheep scab shall be permitted to run at large or to come in contact with any animal which is not so affected.

‘2. Every person having in his possession or keeping a sheep affected with scab shall forthwith cause such animal to be treated in a manner satisfactory to the nearest veterinary inspector.

‘3. Any veterinary inspector may declare to be an infected place within the meaning of “The Animal Contagious Diseases Act, 1903,” any place or premises, or any steamship or steam or other vessels, or any railway car or other vehicle, where the contagion of scab is known or suspected to exist.

‘4. Every veterinary inspector shall have full power to order sheep affected or suspected of being affected with scab to be collected for inspection and, when necessary, to be detained, isolated or treated in accordance with the instructions of the veterinary director general.

‘5. The expense of and incidental to such collection, isolation and treatment shall be borne by the owners of the sheep and, if advanced by the inspector, shall, until paid, be a charge upon the said sheep, without prejudice, however, to the recovery of any penalty for the infringement of these regulations or of “The Animal Contagious Diseases Act.”

‘6. Inspectors are hereby authorized to order the slaughter of any sheep found to be affected with sheep scab, or suspected of being so affected, subject to compensation if and when the Act so provides, and to order the disposition of the carcasses of such animals.

‘7. Before an order is made for the payment of compensation in any of the cases aforesaid, there must be produced to the Minister a satisfactory report, order for slaughter, certificate of valuation and slaughter, and certificate of cleansing and disinfection, all signed by the inspector.



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'8. No sheep, or any part thereof, shall be removed out of an infected place without a license signed by an inspector.

'9. Every yard, stable, or outhouse or other place or premises, and every wagon, cart, carriage, car or other vehicle and every vessel and every utensil or other thing infected with scab shall be thoroughly cleansed and disinfected by and at the expense of the owner or occupier in a manner satisfactory to a veterinary inspector.

'J. G. RUTHERFORD,  
'*Veterinary Director General.*

'Health of Animals Branch,  
'Department of Agriculture,  
'Ottawa.'

As a further precautionary measure against the spread of the disease, and with the special object of preventing the shipment of affected sheep for exportation, the following order was issued:—

## DEPARTMENT OF AGRICULTURE.

OTTAWA, March 23, 1905.

'NOTICE is hereby given that, under the provisions of the "Animal Contagious Diseases Act, 1903," I do hereby declare that a contagious disease of animals, known as sheep scab, exists in the townships of North Dorchester, London, McGillivray, East Williams and Ekfrid, in the county of Middlesex; Warwick, Brook and Dawn, in the county of Lambton; Zone, Camden and Chatham in the county of Kent, in the province of Ontario, in this Dominion, and that hereafter all persons are strictly forbidden to move any live sheep whatever out of the said townships, except as hereinafter provided.

'The shipment of sheep from the said townships is hereby authorized under the following conditions:—

'1. The shipment from the said townships of live sheep intended for export from Canada may be permitted, provided that each carload, or part thereof, is accompanied by a certificate of inspection, signed by one of the regularly appointed inspectors of this department, stating that the sheep comprising such carload or part thereof, are free from disease and in every way fit for immediate slaughter. Such sheep must also be described in the way bill accompanying them as being for immediate slaughter and for no other purpose.

'2. The shipment of sheep from the said townships for other purposes, to points within the Dominion of Canada, may be permitted, provided that each shipment is accompanied by a certificate of inspection signed by one of the regularly appointed inspectors of this department, stating that the sheep comprising the same are free from disease, and have not been in contact with affected animals.

'3. Shippers must notify the nearest inspector, not less than twenty-four hours previously, of the exact time and place of the intended shipment.

'GEO. F. O'HALLORAN,  
'*Deputy Minister.*

At the same time the official veterinary surgeons residing within a radius of five miles of any township in which an authentic case of sheep scab had occurred were notified to refrain from issuing the usual health certificates for sheep about to be exported to the United States.

It was, of course, impossible to do much in the way of treatment until later in the season, but with the advent of warmer weather all the affected flocks, as well as a considerable number of those held on suspicion, were subjected to repeated and systematic dipping. The mixture used for this purpose was the standard lime and sulphur dip which has for the past two seasons been employed with marked success in



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dealing with mange, until recently, so prevalent among our western range cattle. With one or two somewhat notable exceptions, owners and breeders of sheep, realizing the extent to which their own interests were involved, worked harmoniously with our inspectors and assisted them in every possible way, both in locating infected animals and in enforcing the regulations.

Some little difficulty was experienced in inducing the United States authorities to admit sheep from districts in which outbreaks of the disease had taken place, but this was finally overcome through the issuing of special certificates for such shipments by the regular salaried inspectors dealing with the disease.

I am very glad to be able to report that the various measures outlined above proved eminently successful, and that the disease has apparently been mastered in each of the various localities where its existence was brought to light. Repeated and careful inspections of the flocks formerly infected have failed to discover the existence of the disease, except in one isolated instance where a small flock of sheep in Kent county was found to be still affected. These animals have been properly dealt with and, although still kept under supervision, are, I think entirely free from disease.

Quite recently our inspector on Toronto market reported finding some suspicious cases among sheep sent there for sale. As a result of the investigation which followed another small flock in the vicinity of Toronto has been placed under quarantine, although in this case only on suspicion.

With these exceptions the country appears to be free from scab, a fact which, in view of the alarming conditions existing a year ago, is certainly very gratifying. In dealing with sheep scab, however, as with many other contagious diseases, eternal vigilance is the price of safety, and our self-congratulation should, in this instance especially, be very moderate, in view of the possibility, illustrated by this outbreak, of the disease existing wide-spread throughout closely peopled communities among sheep owned by intelligent and experienced breeders, and under the constant observation of scores of veterinary surgeons.

As already stated elsewhere, precautions have been taken to prevent the possibility of infected sheep from Ontario reaching American markets in future, by making provision for their inspection before leaving the country.

The provisions of the following order are now strictly enforced :—

‘In virtue of the authority given me by the provisions of Sections 58 and 73 of the Order in Council of the 30th March, 1904, containing regulations relating to Animals Quarantine,, I do hereby give notice that, on and after this date, all sheep consigned from points in the Province of Ontario to Buffalo markets, whether intended for export to Europe or not, must be inspected at Bridgeburg by a regularly appointed veterinary inspector of this department, and must not be permitted to leave Canada unless accompanied by a certificate of the said inspector to the effect that they are free from contagious and infectious disease, and otherwise fit for export.

‘Sheep consigned from Ontario to points in the United States other than Buffalo, must be inspected and certified in a similar manner by a regularly appointed veterinary inspector at the place of crossing the International boundary, except when shipped via Montreal, in which case they shall be inspected at that place.

‘This order shall not apply to sheep for breeding, grazing or feeding, which are accompanied by a certificate signed by a Canadian official veterinarian stating that no contagious disease affecting sheep has existed in the district in which the animals have been kept for six months preceding the date of exportation, or to sheep which are accompanied by a certificate signed by a regularly appointed veterinary inspector of this department stating that they have been twice dipped in lime and sulphur dip of a strength equal to that required by the United States regulations.’

‘A. L. JARVIS,

‘*Acting Deputy Minister of Agriculture.*

‘OTTAWA, September 26, 1905.’



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Sheep Scab Statistics for the Twelve Months ended October 31, 1905.

In Ontario 446 animals were found to be affected with Sheep Scab, involving the quarantine of 1,565 sheep on 94 premises, distributed as follows :—

County.	No Affected.	No. Quarantined.
Lambton .. .. .	128	203
Kent .. .. .	46	163
Middlesex .. . . .	99	621
Frontenac .. . . .	72	99
Wentworth .. . . .	3	8
Toronto .. . . .	8	100
Lincoln .. . . .	12	12
Huron .. . . .	10	10
Norfolk .. . . .	20	81
Perth .. . . .	3	13
Lennox .. . . .	6	58
Grey .. . . .	38	40
Haldimand .. . . .	1	98
Simcoe .. . . .	..	9
Nipissing .. . . .	..	50
	446	1,565

Quebec.

One hundred and forty-five sheep in the vicinity of La Baie du Febvre were quarantined on suspicion and subsequently released.  
Forty-two animals, eight of which were affected, were quarantined at St. Norbert.

Sheep Scab Statistics for the 5 months ended March 31, 1906.

In Ontario seventeen animals were found to be affected, involving the quarantine of 255 sheep, distributed as follows:—

County.	No. Affected.	No. Quarantined.
Kent .. . . .	4	11
Middlesex .. . . .	7	43
Toronto city .. . . .	6	6
North York .. . . .	..	195
	17	255

ANTHRAX.

Outbreaks of anthrax have occurred in several different localities. When reported to the department or to our inspectors direct, these have been promptly dealt with although in some cases delay has occurred through mistakes in diagnosis on the part of owners and attending veterinarians. In several instances human beings became infected through handling the carcasses of dead animals and at least two deaths occurred. In this connection, I would again take occasion to impress upon all and sundry the paramount importance of caution in dealing with the carcasses of animals which die suddenly or from unexplained or indefinite causes. It is by no means an uncommon occurrence for butchers to become infected through skinning animals which have died from anthrax, while veterinarians occasionally contract the disease in treating affected animals or in making post-mortem examinations. In this connection I would call attention to the circular reproduced on page 57, which gives full instructions as to forwarding specimens to the biological laboratory for examination in cases where there is difficulty in forming an opinion as to the nature of any out-



break of disease. Owing to the suddenness of its manifestations and the rapidity with which fatal results usually supervene, cases of anthrax are comparatively seldom seen by our inspectors until after death has occurred. Treatment of diseased animals is seldom possible and even less frequently advisable, although in some forms of the disease recovery occasionally takes place. In dealing with this disease therefore, our officers generally confine their efforts to securing the proper and early disposal of all carcasses and debris and the disinfection of stables and other premises which may have become infected. Preventive inoculation is frequently effective in stopping the spread of anthrax but, for obvious reasons, our officers do not themselves inoculate contact animals. Owners are, however, urged to adopt this precaution and in order to facilitate their efforts anthrax vaccine is supplied by the department at two-thirds of the usual retail cost.

The following outbreaks were reported and dealt with between November 1, 1904, and March 31, 1906:—

	Outbreaks.	Animals died.
Ontario.. . . . .	4	7
Quebec.. . . . .	1	17
Nova Scotia.. . . . .	3	3
British Columbia.. . . . .	2	7
	—	—
	10	34

BLACK QUARTER.

Black quarter has, as usual, prevailed to some extent in different parts of the Dominion. As this disease is not dealt with under the Animal Contagious Diseases Act, it is not possible to furnish statistics as to the number of outbreaks or of animals affected.

The practice of preventive inoculation is being very generally adopted.

During the seventeen months ended March 31, 1905, 2,290 doses of blacklegine, and 31 outfits for injecting same, were sent out from headquarters, and one outfit and 350 doses were sold at Medicine Hat by Dr. Hargrave.

The total sold was therefore 2,740 doses of blacklegine and 32 outfits.

It must not be forgotten that vaccine is also sold by many druggists throughout the Dominion, so that the figures quoted above do not by any means indicate the number of animals treated.

ACTINOMYCOSIS.

Occasional reports reach the department as to the existence of actinomycosis in various districts of the Dominion. It does not, however, appear to prevail to any serious extent, although in some localities the herbage is evidently infested with the fungus which gives rise to the disease.

It is not now dealt with by the department, except in so far as the exportation of infected animals is forbidden.

A few animals were rejected on this account during the past season.

SWAMP FEVER.

As will be seen from the report of Dr. Torrance, no new light has been obtained as to the nature and causes of this disease. Fortunately, it has greatly decreased in prevalence, this fact being, in my opinion, due to the improved drainage of the districts in which it was formerly most common.



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Much confusion still appears to exist among horse owners and even veterinary surgeons, as to the identity of this disease. Many outbreaks of influenza among horses are credited to swamp fever with the natural consequence that it is generally believed to prevail to a much greater extent than is actually the case. There is absolutely no reason for confounding the two diseases, if the following three main points of difference are borne in mind:—

In genuine swamp fever the appetite continues good, even voracious, until within a few hours of death, which generally occurs from two to four months after the animal first becomes affected.

In typhoid influenza the appetite, as a rule, fails almost entirely after the third day, only returning with the advent of convalescence, ten or fifteen days later. In fatal cases death usually occurs from ten to twenty days after the first seizure, although as complications often appear, no hard and fast rule can be laid down.

Swamp fever, properly so called, is, in my experience, fatal in at least ninety-nine per cent of the cases dealt with, while under skilful veterinary care and with favourable conditions twenty per cent would be a large mortality in typhoid influenza.

There are, of course, many other distinctions palpable to the properly trained veterinarian, but the three mentioned above should, if carefully borne in mind, enable any intelligent horseman to differentiate between the two diseases.

## RABIES.

An outbreak of rabies was reported from North Portal, Assa., in March, 1905, the disease having evidently been introduced from North Dakota, where it has been known to exist for some years. As a general rule, it is well to accept with caution reports as to the existence of rabies, but in the present instance there appears to be no room for doubt that two animals were actually affected, although the nature of the disease was not verified. The animals suspected, as well as a number of stray dogs, were killed, while all others owned in the vicinity were ordered to be muzzled.

No further case occurred in this district until July, when an outbreak of disease among dogs, which was supposed to be rabies, was discovered at Oxbow. In this instance, one dog was killed by our inspector, and eleven others were destroyed by their owners. A departmental order was issued, and forwarded to the commissioner of the R.N.W.M. Police at Regina, to whose discretion the matter of putting it into force was left. He, however, considered it unnecessary to do so.

Since that time, several reports have been received from the same neighbourhood, and a number of premises are now in quarantine. The persistence of these peculiar outbreaks is certainly very suspicious, and I think there can be little doubt that they are really due to rabies. Though fortunately little harm has been done thus far, this condition of affairs is most undesirable. Instructions have been issued to secure, and forward for examination, pathological specimens from suspected cases, so that we may be enabled to reach a decision as to the true nature of the affection.

Some alarm was caused in London, Ont., by the reported appearance of rabies in June last. In this case, a small dog bit a child, but as both dog and child were immediately taken to New York, the department was deprived of any opportunity of verifying the diagnosis.

With a view to forestalling any possible outbreak, and at the same time allaying public excitement, two of our veterinary inspectors were instructed to co-operate with the city authorities, and the local Board of Health. A large number of dogs were examined, several of which, for one reason or another, had bitten human beings, and were quarantined for some considerable time. No actual case of rabies was found, which is somewhat remarkable in view of the published report that the first dog mentioned was pronounced at the Pasteur Institute at New York to be undoubtedly affected with that disease.



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The most striking feature of the investigation conducted by the officers of this department at London was the information obtained as to the large number of human beings bitten by dogs within a very short space of time. Many of our Canadian cities and towns are simply over-run with useless mongrels, which as matters now stand are an almost intolerable nuisance, and which, in case of an outbreak of rabies, would prove a most serious menace to public health. In view of this possibility, I think steps should be taken to impress upon municipal authorities the advisability of increasing to a considerable extent the taxation on dogs.

As no regulations relating to rabies were in existence the following were established by Order in Council dated August 10, 1905:—

*'By Order in Council dated 10th August, 1905, in virtue of "The Animal Contagious Diseases Act, 1903."*

'1. No dog or other animal which is affected with or has been exposed to the infection of rabies, shall be permitted to run at large, or to come in contact with other animals.

'2. Any veterinary inspector may declare to be an infected place within the meaning of "The Animal Contagious Diseases Act, 1903," any place or premises where the infection of rabies is known or suspected to exist.

'3. Veterinary inspectors are hereby authorized to order the slaughter of any dog or other animal affected with rabies, or suspected of being so affected, and to order the disposition of the carcase of such animal.

'4. Veterinary inspectors are hereby authorized to order dogs or other animals which have been exposed to the infection of rabies, to be detained, isolated or muzzled.

'5. No dog or other animal, nor any part thereof, shall be removed out of an infected place without a license signed by an inspector.

'6. Every yard, stable, or outhouse, or other place or premises, and every wagon, cart, carriage, car or other vehicle, and every vessel and every utensil or other thing infected or suspected of being infected with rabies, shall be thoroughly cleansed and disinfected by and at the expense of the owner or occupier in a manner satisfactory to a veterinary inspector.

'7. On receiving the report of an inspector to the effect that rabies is known or suspected to exist in any locality, the Minister of Agriculture may order that all dogs, or other animals, within such an area as he may determine or describe, shall be detained, isolated or muzzled during such period as he may see fit.

J. G. RUTHERFORD,  
*Veterinary Director General.*

'HEALTH OF ANIMALS BRANCH,  
'DEPARTMENT OF AGRICULTURE,  
'OTTAWA.'

## BIOLOGICAL LABORATORY.

The work performed at the Biological Laboratory has been of an eminently satisfactory nature. The large quantities of mallein required in the active campaign now being waged against glanders would have entailed a very considerable expenditure had it been necessary to secure this preparation from outside sources. Dr. Higgins has, however, been able to supply all demands, and I have good ground for hope that this institution will shortly be in a position to furnish some at least of the other preparations which we are now compelled to purchase elsewhere. Since the date of my last report two additions have been made to the purely pathological staff of the branch in the persons of Dr. A. Watson, who was engaged as assistant to Dr. Higgins in April, 1905, and Dr. S. Hadwen, formerly inspector at Nelson, B.C., who was



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in September last placed in charge of the experiment station established at Lethbridge for the purpose of conducting an investigation into the disease known as *maladie du coït*. A large number of pathological specimens have been examined during the period covered by this report, with great benefit to our inspectors and others by enabling them to decide as to the exact nature of outbreaks of disease and to deal with them accordingly.

Two small buildings have been erected at the laboratory for the accommodation of experimental animals. These supply a long felt want, but I would again urge upon you the advisability of providing a well equipped, sanitary stable in which it would be possible to carry on research work under safe and scientific conditions.

The report of Dr. Higgins will be found both interesting and instructive.

The following circular has been sent to all veterinary practitioners and others to whom it is likely to be of use:—

Dominion of Canada,  
Department of Agriculture,  
Health of Animals Branch.

## INSTRUCTIONS FOR SENDING SPECIMENS FOR MICROSCOPIC EXAMINATION.

In forwarding specimens of diseased tissues or organs for diagnostic purposes the following suggestions should be noted and carefully carried out in order to insure their arrival at the laboratory in good condition.

*Specimens for Pathological Examination.*

Unless a specimen is so remarkable and characteristic that it should be preserved as an exhibition or museum specimen, it is unnecessary to send large portions. Small portions about an inch cube well selected from different regions are sufficient. They should be taken in such a manner as to exhibit the normal tissue passing into the diseased tissue. Together with the material which shows actual lesions, portions of an inch cube should be taken from the lung, heart, liver, spleen and kidney. In many instances the microscopical lesions in apparently healthy organs give the clue to the affection from which the animal suffered. These small portions should be placed in a wide mouthed bottle or jar, with at least five times their volume of alcohol, or better still a 4 per cent solution of formaldehyde.

Specimens from different animals should be placed in separate containers.

Large specimens may be packed in ice or frozen.

*Hog Cholera.*

Where this disease is suspected, in addition to the material above designated, a portion of the intestine is necessary, consisting of the last portion of the small intestine and the first portion of the large intestine, including the ileo-cæcal valve.

*Specimens for Bacteriological Examination.*

Bacteriological specimens are easily contaminated by the many putrefactive organisms which exist in the air and soil and, with few exceptions, must be taken by some one thoroughly trained in bacteriological methods.

*Anthrax.*—A few drops of blood from an animal suspected of having died of this disease, placed on a clean piece of note paper, allowed to dry in the air, folded, placed in an envelope and forwarded to the laboratory provides sufficient material for diagnostic purposes.



Specimens for examination should be accompanied by a letter giving complete information concerning the case in question, with its history, clinical symptoms, &c.

Specimens must be labelled in order that they may be identified. The name and address of the owner of the animal and the name and address of the sender of the material are necessary in order that records may be kept and reports promptly forwarded to the proper parties.

Specimens not exceeding five pounds in weight after being securely packed, to prevent breakage of the containers or leakage (see section 106 and section 107, page xx, Canada Postal Guide), should be sent by mail.

Specimens exceeding five pounds in weight should be sent by express.

Specimens should be addressed,  
BIOLOGICAL LABORATORY,  
Ottawa, Canada.

J. G. RUTHERFORD,  
*Veterinary Director General.*

### EXPORT INSPECTIONS.

The work of inspecting cattle and sheep for export to Britain has been, as hitherto, carefully conducted at Montreal, St. John and Halifax. During the past season a number of cattle were shipped from Western Ontario *via* Buffalo, direct to United States seaports, and these, in accordance with section 58, which was added to the regulations two years ago, were inspected at Bridgeburg before being permitted to cross the boundary. In order to guard against the possibility of any cattle affected with mange in the first stages being passed by our inspectors at the time of shipment from the quarantined area in Alberta and Saskatchewan, arrangements were made for a second veterinary examination of all export cattle on arrival at Winnipeg. This precaution, in conjunction with the final inspection before leaving Canada, makes it almost impossible for any animal, no matter how slightly affected, to escape detection. As a number of cattle are shipped from the range country to British Columbia for immediate slaughter, I deemed it advisable to make arrangements for the cleansing and disinfection, after being unloaded, of all cars used for their transportation. At points where we have resident inspectors this work is supervised by them, while at other points it is looked after by specially appointed lay officers, a number of whom are provincial constables. It is a serious question as to whether or not a more stringent policy should be adopted with regard to the inspection and certification of horses shipped from Southern Alberta and other places where contagious disease is known to prevail. At the present time all horses exported from a considerable area in Alberta are subject to inspection for mange, and any animals showing clinical symptoms of this and other more serious diseases are, therefore, likely to be detected by our officers. I am not sure, however, that this inspection is a sufficient safeguard, and am carefully considering the feasibility of making it considerably more rigid.

Owing to the detection by United States officers on the Buffalo market of some cases of scab among sheep shipped from Western Ontario, it was decided, after taking all possible steps to trace and stamp out the disease, to station an inspector at Bridgeburg with the object of preventing the recurrence of incidents of this nature. The services of Dr. Philps being no longer required in the area under restrictions for hog-cholera, he was transferred to Bridgeburg and arrangements were made with the railway authorities for the erection of suitable yards for the detention and examination of all Canadian sheep crossing the boundary at that point. His services are also utilized for the inspection of export cattle there entering the United States in bond for shipment to Europe. After his arrival in Bridgeburg, until the trade was brought to an end he also inspected, before shipment, the hogs purchased in Buffalo on account of Canadian packers.

Arrangements have likewise been made for the inspection of Canadian sheep entering the United States at other points. This trade is of considerable importance



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to Canadian sheep raisers and the slight inconvenience caused to shippers by the inspection is of little moment in comparison with the loss which would follow exclusion from the American markets.

TABLE showing animals inspected for export at the following ports for the twelve months ended October 31, 1905.

	Horses.	Cattle.	Sheep.	Swine.
	No.	No.	No.	No.
Montreal to Great Britain.....	432	120,550	33,064	150
Inspected at Montreal for shipment to Great Britain via Boston and Portland.....		33,542	27,873	
St John, N.B., to Great Britain.....	68	30,627	16,304	
Halifax.....		600		
Charlottetown.....		18	2,049	
Montreal to France.....		978		
Montreal to South Africa.....		105	274	
St. John, N.B., to South Africa.....	145	276		
Charlottetown to West Indies.....		16		
Halifax to West Indies.....	5		67	
Halifax to Bermuda.....	65	20	898	14
Halifax to Newfoundland.....	3	24	13	13
Charlottetown to Newfoundland.....	23	1,261	2,345	
Halifax to Jamaica.....	10	23	278	
Halifax to Trinidad.....			27	4
Halifax to Barbados.....	10	5	12	
Vancouver to Japan.....		25		
Bridgeburg to United States.....			47,707	
Cornwall.....			690	
Total.....	761	188,070	131,600	181

Total animals exported from above ports, 320,612.

Of the above 37 horses, 26,685 cattle and 7,627 sheep were from the United States and Mexico.

ANIMALS inspected for Export from November 1, 1905, to March 31, 1906.

	Horses.	Cattle.	Sheep.	Swine.
	No.	No.	No.	No.
Montreal to Great Britain.....	247	14,970	920	
Inspected at Montreal for shipment to Great Britain via Boston and Portland.....		10,469	11,137	
St. John, N.B., to Great Britain.....	65	25,472	1,811	
Halifax.....		1,042		
Bridgeburg.....		257	973	
Toronto.....		144		
St. John, N.B., to South Africa.....		450		
Charlottetown to West Indies.....	14	4		
Charlottetown to Newfoundland.....	2	145	422	
Halifax to Newfoundland.....	1		6	
Sydney, N.S., to St. Pierre and Miquelon.....		22	62	34
Halifax to Bermuda.....	8	7	189	4
Halifax to Jamaica.....			80	
Halifax to France.....		150		
Bridgeburg to United States.....			55,888	
Windsor.....			354	
Montreal.....			384	
Prescott.....			574	
Total.....	337	53,132	73,100	38

Total animals exported from above ports, 126,607.

Of the above, 12,288 cattle were from the United States.



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EXPORT animals rejected at following ports in twelve months ending October 31, 1905.

	Horses.	Cattle.	Sheep.
	No.	No.	No.
Montreal. ....	17	219	117
St. John. ....		21	14
Total. ....	17	240	131

Of the above, sixty-eight cattle at Montreal and two at St. John were rejected for actinomycosis, and forty-three at Montreal for mange.

Of the horses, eight were rejected on account of strangles, and nine for influenza.

The rest of the animals rejected were suffering from lameness, or injuries received during transportation and showed no indication of contagious or infectious disease.

EXPORT animals rejected at the following ports between November 1, 1905, and March 31, 1906.

	Cattle.	Sheep.
	No.	No.
Montreal. ....	38	31
St. John. ....	3	
Total. ....	41	31

Of the above nineteen cattle at Montreal and three at St. John were rejected for actinomycosis. The rest of the animals rejected were suffering from lameness, or injuries received during transportation, and showed no indication of contagious or infectious disease.

IMPORTATIONS.

From November 1, 1904, to October 31, 1905, permits were issued as follows:—

From.	Horses.	Cattle.	Sheep.	Swine.
	No.	No.	No.	No.
Mexico. ....	50	700		
Great Britain. ....		85	378	142

During the past five months, November 1 to March 31, permits were issued to import the following stock:—

From Mexico, 1,000 cattle ; from Great Britain, 92 cattle, 15 sheep.



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IMPORT Inspections from Europe from November 1, 1904, to October 31, 1905.

Ports.	Horses.	Cattle.	Sheep.	Swine.	Goats.
	No.	No.	No.	No.	No.
Lévis Quarantine Station. ....	33	52	342	74	17
Montreal. ....	694				
St. John, N.B. ....	41	26			
Halifax. ....	33				
Total. ....	801	78	342	74	17

IMPORT Inspections from Europe from November 1, 1905, to March 31, 1906.

Ports.	Horses.	Cattle.
	No.	No.
Quebec. ....	3	3
Montreal. ....	43	
St. John, N.B. ....	243	10
Total. ....	289	13

IMPORT Inspections from United States from November 1, 1904, to October 31, 1905.

Port.	Horses.	Cattle.	Sheep.	Swine.	Goats.	Mules.
Halifax, N.S. ....	9					
St. John, N.B. ....		10	1	5	2	
St. Johns, P.Q. ....		2				
Sherbrooke, P.Q. ....		24	1	179	4	
Cornwall, Ont. ....		1				
Niagara Falls, Ont. ....	27	18	34	17		
Sarnia, Ont. ....	247	76	221	1,222		
Bridgeburg, Ont. ....	67			42,047		
Sault Ste. Marie, Ont. ....		9				
Windsor, Ont. ....	101	57	21	17	1	44
Port Arthur, Ont. ....		8				
Winnipeg, Man. ....	3,520	2,530	98			331
Emerson, Man. ....	2,311	1,317				
Gretna, Man. ....	70					
Killarney, Man. ....	456	299	61			10
Morden, Man. ....	52	14				
Crystal City, Man. ....	216	227	1			
Mowbray. ....	361	427	11			4
Deloraine, Man. ....	303	214				8
Melita, Man. ....	180	60				8
North Portal, Sask. ....	6,434	6,365	92	48		311
Wood Mountain, Sask. ....	1,182	241				1
Maple Creek, Sask. ....	442	3,333	3,070			
Medicine Hat, Alta. ....	45					
Pendant d'Oreille. ....	656	913				
Coutts, Alta. ....	2,584	3,940	4,473			6
Cardston and Twin Lakes. ....	1,425	995	1,425			9
Gateway and Rykerts, B.C. ....	1,346	420				9
Nelson and Rossland, B.C. ....	949	1,468	3,907	327		31
Grand Forks and Midway. ....	272	190	3,024	308		2
Osoyoos. ....	138	88	149	8		
New Westminster. ....	326	375	2,493	4		8
Vancouver. ....	85	1	25,893			
Victoria. ....	82	12	24,947		7	20
Total. ....	23,886	23,634	69,922	44,182	14	802



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IMPORT Inspection from the United States from November 1, 1905, to March 31, 1906.

Port.	Horses.	Cattle.	Sheep.	Swine.	Mules.	Goats.	Buffalo.
St. John, N.B.....		2					
St. Johns, P.Q.....		1	1				
Sherbrooke, P.Q.....		3		1			
Niagara Falls.....	59	6	4		8		
Sarnia.....	68	68	704	134			2
Bridgeburg.....		2	39	21,745			
Sault Ste. Marie.....		4					
Windsor.....	28	53		6,705			
Rainy River.....		2					
Winnipeg.....	2,420	1,402	10		105		
Emerson.....	780	198	4	5			
Killarney.....	203	142	6		16		
Morden.....	10						
Crystal City.....	148	34			3		
Mowbray.....	172	173					
Deloraine.....	174	107			3		
Melita.....	55	7					
North Portal.....	5,587	1,433			367		
Wood Mountain.....	37	1	7				
Maple Creek.....	265	291					
Pendant d'Oreille.....	873	85					
Coutts.....	1,722	281	22	1	5	5	
Twin Lakes.....	400						
Gateway and Rykerts.....	75	171			1	106	
Nelson, Rossland and Waneta...	295	184	694	16	8		
Grand Forks.....	28	37		28			
Midway.....	21	69		6			
Osoyoos.....	29			6			
New Westminster.....	228	108			4		
Vancouver.....	14	1	11,130				
Victoria.....	18	3	8,771		42		
White Horse, Y.T.....	35						
	13,744	4,868	21,392	28,647	562	111	2

IMPORT Inspections from Mexico from November 1, 1904, to October 31, 1905.

Port.	Horses.	Cattle.
North Portal.....	74	632

IMPORT Inspections from Mexico from November 1, 1905, to March 31, 1906.

Nil.

IMPORTATIONS FROM MEXICO.

As will be noted, the importations of animals from Mexico show another well-marked decrease from those of last year, which in turn were much smaller than in the two preceding seasons. I do not think that this falling off is to be regretted. The importation to such a country as Canada of foreign cattle for grazing purposes is in any case somewhat of an anomaly, showing as it does that there is considerable room for improvement in our present methods of conducting the live stock industry.

When, furthermore, as in this instance, the cattle are of markedly inferior quality and come from a country where absolutely no sanitary precautions are taken and which must always remain the subject of grave doubt as to its freedom from one of



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the most dangerous and contagious maladies affecting the bovine species, the cessation of the trade can hardly be considered a misfortune.

As has been stated in previous reports, tick fever prevails to a greater or less extent throughout the Republic of Mexico, with the reputed exception only of the State of Chihuahua. Since the inception of the trade in 1902, I have never felt that it was quite safe, as while there is absolutely no fear of tick fever becoming permanent in this northern climate, there is always the risk of its being introduced early in the summer when it might do tremendous damage before the advent of cold weather. Careful inquiry into all the conditions surrounding the trade brought out the fact that the state of Chihuahua, from which most of the earlier and all the recent smaller shipments come, was apparently quite free from the disease. This condition, taken in conjunction with the fact that early in 1903 the introduction of a number of tick infested cattle from the state of Coahuila was narrowly averted, led me to recommend that no stock from Mexico should be admitted to Canada except by permit to be issued only in the case of shipments from Chihuahua. The governor of the state, Don Luis Terrazas himself, one of the largest, if not actually the largest, cattle owner in the world, undertook in 1903 to prevent the introduction within its boundaries of cattle from any of the infected states with which it is surrounded on practically all sides. Under these conditions and still further safeguarded by the United States inspection at El Paso and a close examination by our own officers at the Canadian boundary, the trade has been permitted to continue without so far at least, any untoward results. Knowing something, from previous residence in that country, of the conditions actually existing in Mexico, I was never quite satisfied as to the efficiency of the quarantine said to be maintained by Chihuahua against the neighbouring states. State rights, even in Mexico, have their limitations and as the trade bids fair to persist and might at any time assume as it did before, large proportions, I deemed it advisable to open up communication with the federal authorities of the republic with a view to securing from them some guarantee as to the health of Chihuahua and its protection from infection by the cattle of adjoining states. During the past winter therefore I visited Mexico, and with your approval, discussed the whole question with Dr. Liceaga, president of the Superior Council of Health, to whom I was finally referred by the vice-president, Senor Ramon Corral. I found, as I had anticipated, that the republic was practically without any veterinary sanitary service and that little or nothing was known regarding the prevalence of animal plagues or modern methods for their control. The question of jurisdiction as between the federal and state authorities in matters of animal health was also, so far as I could learn, quite unsettled, and I might almost say unconsidered. Altogether the results of my inquiries were disappointing and I left Mexico convinced that so far as importations of live stock from that country are concerned, our safety from disease will depend at least for the present, entirely upon the precautions which we may ourselves adopt for its exclusion. I would add, however, that Dr. Liceaga, who was most courteous and listened with great attention to my explanation of the situation, undertook to lay the matter before the President himself with the view of securing the passage of regulations preventing the introduction to Chihuahua of cattle from the surrounding states. This would undoubtedly be a great safeguard and one which, if properly enforced, might warrant the continuance of the trade. If it is not secured before the beginning of next season I would advise the exclusion of Mexican cattle altogether as the risk of infection being introduced to Chihuahua undoubtedly exists. The powers of the state authorities to control the movement of cattle into or out of other states being more than doubtful from a constitutional point of view, I do not think it advisable for this department to rest upon their assurance of safety.

## QUARANTINE STATIONS.

Some progress has been made in improving quarantine facilities at coast points, as well as along the International boundary line. During a visit to Halifax in



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August last, I selected a suitable site on the new quarantine ground acquired in 1904. A commodious building has since been erected and is now almost ready for occupation. This new station is conveniently situated on the Cotton Factory siding within the city of Halifax, and possesses the great advantage over the premises previously used that animals can be conveyed to it by rail direct from the deep water terminus without risk of infection. The number of animals imported via Halifax is never large, and I have no doubt that the present building, if properly maintained, will serve the uses of the department for many years.

At St. John, N.B., two stables are in course of erection, the plans being similar to that adopted at Halifax. This station also possesses the advantage of being easily reached by rail, and as it is much more largely used than that at Halifax, its comfort and convenience will be appreciated by importers to a correspondingly greater extent.

At Charlottetown, where imported stock is seldom landed, it has not been found necessary to establish a permanent quarantine station, although an inspector is employed at that point.

Our most important quarantine station is undoubtedly that at Point Lévis as it is there that the majority of animals imported from Europe enter Canada during the season of summer navigation. This station, which has been in existence since 1876, is situated within the yard of Fort No. 3 at Point Lévis, and while the buildings are inexpensive it is well planned and has long been ably conducted by Dr. Couture and a staff of permanent employees under his control. It furnishes accommodation for nearly 500 cattle and about 300 sheep, and is laid out so as to permit of the absolute isolation of the stock of each importer. Its situation is excellent and it would be an ideal quarantine station were it not for the fact that under existing conditions animals, after landing, must be driven for a considerable distance over the public highway before reaching their quarters. Owing to the peculiar topographical conditions it has until recently been practically impossible to remedy this state of affairs.

Latterly the construction of the Lévis Electric Railway has suggested the possibility of conveying the animals direct from the wharf to the station by means of electric traction.

The adoption of this plan would render the establishment one of the safest and most perfect quarantine stations in the world, and would greatly lessen the risk of conveying infection to animals in the neighbourhood.

At Victoria, B.C., a lease has been secured of a small property at a point near the outer wharf, on which are situated some old buildings used in former years by the department for quarantine purposes. These are being put in repair and slightly altered so as to furnish accommodation for any animals arriving from the United States, which it may be found necessary to place in quarantine.

At Vancouver no station has as yet been erected owing to the uncertainty of local railway construction and the location of new stock yards at that point. As soon as these matters are settled it is the intention to construct at Vancouver a station similar to those which have been erected along the International boundary line in British Columbia and the Northwest.

A good deal of attention has been devoted to the improvement of the quarantine service along the boundary between Canada and the United States.

In eastern Canada, the number of animals imported from the United States is very small and it has not, therefore, been thought necessary or advisable to go to any great expense in the construction of quarantine stations, which, under existing regulations, are, with the single exception of that at Sarnia, used only for the accommodation of swine imported for breeding purposes. Range horses imported from west of the Mississippi river, and of the eastern boundary of the state of Minnesota, are admitted at Sarnia, while swine must enter at quarantine stations; all other animals can enter at inspection ports east of Rainy river without being subjected to quarantine.



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In addition to Halifax, St. John, Charlottetown and Quebec, at which, of course, animals from the United States will be received when necessary, the quarantine stations in eastern Canada are Sherbrooke and St. Johns. Que., Niagara Falls, Windsor and Sarnia, in Ontario. At Windsor and Niagara Falls small buildings have been erected by the department. At Sherbrooke a site has been secured on which it is proposed to build a small stable; while at St. Johns the number of animals brought in is so limited that it has scarcely been considered advisable to make permanent provision for their accommodation.

Bridgeburg is now an important point, an inspector being permanently stationed there, and while at the present time the yards of the various railway companies are being used for inspection purposes, I am of opinion that it will be necessary in the near future to erect a small but complete quarantine station.

It is my intention to equip the station at Sarnia with strong corrals, squeezers, &c., suitable for handling the western horses which occasionally enter there.

In addition to those at Emerson, Wood Mountain, Pendant d'Oreille, Coutts and Twin Lakes, which were completed last year, quarantine stations have been erected at Willow Creek, Sask., and at Gateway, Nelson and Midway, B.C., while inspectors are also stationed at Grand Forks and Osoyoos. Quarantine corrals have been erected by the railway companies at Sumas and Douglas, animals being inspected there before crossing the boundary, it being the intention, as above stated, to provide, in the near future, a quarantine station at Vancouver which will serve not only for animals brought in at these points, but for such as may arrive by boat.

It will probably be necessary in the near future to construct quarantine stations at Princeton and Grand Forks, while provision will have to be made for animals entering at Kingsgate over the new Canadian Pacific railway line from Spokane.

## CAR INSPECTION.

The very evident benefit resulting from the strict enforcement of the various regulations requiring the cleansing and disinfection of railway stock cars after conveying animals from infected districts, is the best possible proof that our efforts in this direction although irksome to railway companies, and at times to shippers, are entirely justifiable and in the best interests of all concerned.

At the various points to which hogs were shipped from the United States or from the quarantined area in western Ontario, inspectors have seen that the cars conveying them were, immediately on being unloaded, properly cleansed and disinfected in accordance with the regulations. The same rule is followed in the case of cars conveying cattle and horses from the mange infected area in Alberta and Saskatchewan. Special attention, as elsewhere indicated, is now paid to the cars used in the heavy transit trade in hogs across the western peninsula of Ontario.

Under modern transportation conditions, stock cars form one of the most certain and convenient channels for the carriage of infection from place to place and it is, therefore, impossible to be too particular in seeing that those in regard to which suspicion may reasonably be entertained are so treated as to render them innocuous.

## STOCK YARDS.

Stock yard facilities throughout the Dominion have, I am glad to say, been greatly increased and improved since the date of my last report. The important terminal yards of the Canadian Pacific Railway Company at Hochelaga which had, for some time, been in an unsatisfactory condition, have now been rendered much more comfortable and sanitary. New and commodious yards have been erected at North



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Bay. I understand that it is the intention to furnish facilities at White River for the feeding and watering of export cattle en route from the west. The new yards there will take the place of those hitherto used for that purpose at Schreiber and it is to be hoped that the company will adopt in their construction a plan similar to that in use at Winnipeg which greatly facilitates the rapid loading and unloading of animals. At various more or less important points along this and other railways, new yards have been erected and old ones have been repaired and cleansed in accordance with the regulations. There is still, in some quarters, considerable room for improvement, but on the whole the attitude of the transportation companies in regard to this and other matters connected with the work of the branch leaves little to be desired. Satisfactory progress is being made, and, this being the case, I do not think it is advisable to rush the companies into expenditures, without being certain that the outlay is justifiable and likely to give them a reasonable return.

### MEAT INSPECTION.

In my last report I suggested the advisability of taking steps to inaugurate, for the benefit of some of our younger inspectors, a special course in meat inspection, to be carried on by Dr. Higgins in connection with the Biological Library. The export trade in dead meat, already begun on a small scale is certain to increase largely in the near future, in which event it will be absolutely necessary for us to supply certificates satisfactory to the authorities of importing countries. There are at present, so far as I am aware, no trained meat inspectors in the Dominion, although the requirements of municipal and health acts in various provinces would indicate a reasonably active demand for the services of experts of this class. A thorough training in meat inspection should be part of the curriculum of every veterinary college, but so far the subject appears to have been conspicuous by its absence at all Canadian institutions of that kind.

### MISCELLANEOUS.

During the period which has elapsed since my last report I have attended and addressed a number of public gatherings among others the meetings of the various associations of breeders which were held in Winnipeg in February, 1905, the annual meeting of the Western Stock Growers' Association which took place at Medicine Hat in May, and several others of minor importance. In April I officiated as judge of horses at the Canadian Horse Show in Toronto, while in September I performed a similar service at the Dominion Exhibition in New Westminster, B.C.

In May last I visited Washington and Oregon for the purpose of consulting with the state veterinarians regarding the health of the animals under their care, this being a matter of great importance to us on account of the large importations to Canada now constantly in progress. In June a visit to Washington, D.C., was made during which I discussed informally with Dr. Salmon, then chief of the Bureau of Animal Industry, several official matters of material interest.

In August I had the privilege of attending the annual meeting of the American Veterinary Medical Association which was held at Cleveland, Ohio. At this meeting, which was largely attended, many subjects of great importance were taken up and discussed. Among excellent papers, the most noteworthy was perhaps that of Dr. Leonard Pearson, of Pennsylvania, who gave an interesting resume of his experimental work in connection with immunization against bovine tuberculosis.

I also attended during the year two meetings of the Ontario Veterinary Association, one of which was held in Toronto in December, and the other at London in July. This body has recently begun to show greatly increased vitality which is certain to result in much benefit to its members and, through them, to the live stock interests of the province.



## SESSIONAL PAPER No. 15a

I am pleased to report that some progress has apparently been made in the direction of elevating the standard of veterinary education in Canada. In June last year I had the pleasure of an interview with Hon. Nelson Monteith, Minister of Agriculture for Ontario, in the course of which the whole subject was freely discussed. As a result of this interview a meeting of the Organization Committee of the Ontario Veterinary Association was held in Toronto on November 10, when I, with the full concurrence and approval of the other members present, was accorded the privilege of drafting and subsequently presenting to Mr. Monteith a memorandum pointing out the importance to stock owners of the maintenance of a reasonable standard of veterinary education, and asking the government of the province to take over and conduct the Ontario Veterinary College, as also to pass such legislation as might be necessary in the premises. Mr. Monteith, who received the members of the committee in the most courteous manner, promised to give the proposition his most favourable consideration.

In January I met, by request, Mr. J. W. Flavelle, chairman of the Ontario University Commission, Mr. Colquhoun, the secretary, and Mr. C. C. James, Deputy Minister of Agriculture for the province, and discussed the subject with these gentlemen in all its bearings.

Later the commission embodied in its report a recommendation that the Ontario Veterinary College be taken over and carried on by the Ontario Department of Agriculture on lines similar to those on which the Agricultural College at Guelph is conducted. It is understood that negotiations with this end in view are now in progress. Should these be successful the future of veterinary education in Canada, which has for some time been very doubtful will be assured.

In a country with an enormous and ever increasing live stock industry, it is of the last importance that a high standard of veterinary education should be maintained.

The record of Ontario as a province in educational matters is such that if the plan now under consideration is carried out there need be no fear as to the future of comparative medicine in Canada.

In January also I visited the Agricultural College at Urbana, Illinois, where I had the privilege of an interesting and instructive interview with Dr. McIntosh, the veterinary professor there, who is one of the highest authorities on hog cholera on the American continent.

In the following month I visited the Louisiana University where, through the courtesy of Dr. W. H. Dalrymple, veterinary professor, and W. K. Dodson, A.B.S.B., botanist and bacteriologist, I absorbed much practical information on tick fever, a matter which has for long been made a special subject of study by these gentlemen.

Subsequently, as reported elsewhere, I visited Mexico on official business.

While in El Paso on the return journey, I had the privilege of meeting Dr. Bray, United States bureau inspector at that point, through whose capable hands Mexican cattle en route to Canada have to pass. From Dr. Bray I received much detail information as to the conditions surrounding this somewhat risky traffic.

At Houston and Galveston I made it my business to collect data in regard to the use of Beaumont oil for dipping purposes but, owing to pressure of work, I was unable to devote to this task as much time as I should have liked. I regret to have to say that, so far as I can see at present, the expense will be too great to permit of the use of Beaumont oil in western Canada.

Printed herewith are the reports of the various officers of this branch throughout the Dominion. Among them are several of special note, such as that of Dr. Pethick on Pictou cattle disease, that of Dr. Torrance on swamp fever, those of Dr. McGilvray and Commissioner Perry on conditions in the west, and those of Drs. Burnett, Hargrave and Warnock on *maladie du coït*; as also two interesting reports from the latter gentleman which deal respectively with poisoning by water hemlock, and a peculiar bone disease noticed among cattle in the Porcupine Hills.



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Owing to the change in the departmental year the reports, with the exception of my own, deal separately with: first, the period between November 1, 1904, and October 31, 1905, and second, that between November 1, 1905, and March 31, 1906.

I have the honour to be, sir,

Your obedient servant,

J. G. RUTHERFORD,

*Veterinary Director General.*

The Honourable

The Minister of Agriculture,  
Ottawa.

G. HILTON, V.S.

OTTAWA, October 31, 1905.

SIR,—I have the honour to submit the following report for the year ending October 31, 1905.

My duties with your branch of the Department of Agriculture commenced on May 25, 1905, with headquarters at Portage la Prairie, Manitoba.

Immediately after my engagement, following your instructions, I visited the *maladie du coït* infected district in Alberta for the purpose of familiarizing myself with the outbreak and nature of the disease, also the measures you were adopting for its control and eradication.

I then proceeded by your direction to trace two mares which had been shipped from an infected ranch in Alberta to the province of Manitoba. This proved troublesome and entailed a great deal of travelling, as the animals had been resold after their arrival in this province. They were finally located, one in the Swan River district; the other a few miles from Grand View, and fortunately upon examination, both mares proved to have escaped infection. Returning to Portage la Prairie in response to your previous instructions, I visited the quarantine station at Emerson, and also the inspection ports along the Manitoba boundary. Full reports of these visits were submitted to you upon their completion. In the month of July, I was transferred to Ottawa, and since my arrival here, as you are aware, my work has been confined to your office with one exception, when in August you instructed me to proceed to Merrickville to investigate a suspected outbreak of anthrax, which proved to be a disease of a non-contagious nature, and consequently no action was taken.

I have the honour to be, sir,

Your obedient servant,

GEORGE HILTON.

To the Veterinary Director General,  
Ottawa.

C. H. HIGGINS, D.V.S.

OTTAWA, October 31, 1905.

SIR,—I have the honour to transmit this, my seventh annual report as an officer of the Department of Agriculture, my fourth as its pathologist, covering the period from November 1, 1904, to October 31, 1905.

The work of the biological laboratory during the past year has shown a marked increase over that of any previous year and from this increase it is evident that the services rendered by this institution are appreciated.



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The material received for examination shows a total of 264 series, there being but 93 series during the year previous. The great variety of subjects dealt with is supplying the laboratory with material for investigation and demonstration purposes which will prove of inestimable value. In addition there is the data and material obtained by myself in Alberta from 116 autopsies on horses affected with *maladie du coît*.

The detailing by you of E. A. Watson, V.S., to the laboratory last April has relieved me of some of the routine work, although the increase in the amount of mallein used has made a steadily increasing demand upon my time in its preparation.

The completed laboratory building now provides certain facilities for accomplishing our work not accorded at the writing of my last report. The increase, however, in the amount of mallein which it has been necessary to prepare, and the desirability of preparing all the tuberculin required, call for an increase in equipment that the supply may at all times equal the demand. This increase in equipment can be made by the construction of an incubator room and preparation room in the basement of the building. Such a change would remove the preparation of these two products from the other work of the laboratory and would remove some of the difficulties which at present exist in this important work. At present the small incubator space available prevents the manufacture of tuberculin in sufficient quantities to meet the constantly growing demand and it does not seem to me that it would be advisable to add more small incubators, in view of the fact that small incubators cannot be kept at the desired temperature economically.

The many details demanded of the routine fully occupy our time and original work is accomplished only in spare moments, which does not allow of the careful painstaking effort demanded in accurate investigation. It has been impossible to undertake extensive original investigations during the year, but I anticipate that as Dr. Watson becomes more familiar with the routine of the laboratory it will not be necessary to overlook this important field.

The construction last spring of a building for housing the small animals has proven very serviceable and the stable now under construction which will provide accommodation for four experimental horses is a valuable addition to our equipment.

Without further preliminary remarks, I will proceed to consider some of the more important subjects dealt with during the past year.

## GLANDERS.

There has been some little time spent on the subject of glanders during the past year. This has consisted in the inoculation of small animals with material from horses reacting to the mallein test, some of which had ceased to present the typical rise in temperature or local swelling on the injection of an appropriate dose of mallein. The result of this inoculation work appeared in full in your report and needs, therefore, no further mention in this connection. The heads of the horses above referred to were received at the laboratory, and on the septa nasi of some of these, scars, the result of old ulcers, were found. On some of the septa no lesions visible to the naked eye were detected. These septa are preserved and I anticipate that it will be possible in the near future to make a minute study to determine whether there are other lesions than the scars above referred to.

There has also been quite an amount of routine work with glanders in the preparation of mallein. This work has necessitated the inoculation of quite a large number of animals in preparing the germ for culture purposes and in testing the finished product.

## MALLEIN.

As already stated, the production of mallein has necessitated considerable work with the *bacillus mallei*, the causative agent of glanders. There have been sent from the laboratory on order from your office, 7,819 doses of mallein against 3,153 of the year preceding. The entire amount was prepared and tested at this laboratory. The



cost of preparation was practically that of the year preceding, namely, eleven cents per dose. In this estimate the amount now on hand, about 1,600 doses, is included. The preparation of mallein is very interesting work from the fact that forms are found in the old cultures from which the product is prepared that are never seen in old cultures on solid media. I present herewith photographs illustrating the forms found in fresh cultures, the appearance of the bacillus in pus, and the involution forms found in old cultures.

A monthly statement of the mallein sent out from the laboratory is given below.

	1903-04.	1904-05.
November . . . . .	291	500
December . . . . .	40	295
January . . . . .	135	365
February . . . . .	155	432
March . . . . .	203	400
April . . . . .	184	500
May . . . . .	412	625
June . . . . .	422	1,055
July . . . . .	75	580
August . . . . .	560	861
September . . . . .	305	1,163
October . . . . .	371	1,043
Total . . . . .	3,153	7,819

TUBERCULOSIS.

During the past year a large number of specimens, consisting of tissues and sputum have been received at the laboratory for examination to determine whether or not evidences of tuberculosis were present. From some of this material it has been possible to isolate cultures. These cultures are kept growing in order that material may be at hand when it is possible to undertake investigations in this interesting field.

TUBERCULIN.

There have been sent from the laboratory, 3,145 doses of tuberculin, against 2,649 of the year preceding, on order from your office to veterinary inspectors and others. As was the case during the previous year, small amounts have been prepared with a view of ultimately producing all that may be required by the department. I believe that this can be undertaken profitably just as soon as we have sufficient incubating space for growing the cultures.

I append hereto a detailed statement of the amount of tuberculin sent out each month during the last two years.

	1903-04.	1904-05.
November . . . . .	326	226
December . . . . .	326	374
January . . . . .	350	180
February . . . . .	303	135
March . . . . .	295	263
April . . . . .	146	497
May . . . . .	272	394
June . . . . .	119	149*
July . . . . .	123	126
August . . . . .	173	351
September . . . . .	70	266
October . . . . .	146	184
Total . . . . .	2,649	3,145

\*This includes thirty doses of Japanese tuberculin diluted at the laboratory for use.



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## PICTOU CATTLE DISEASE.

The work of the laboratory with reference to Pictou cattle disease, has as formerly consisted in the examination of material received from Nova Scotia. All this material during the past year has been sent by Dr. Pethick and was from experimental animals with two exceptions.

In the specimens from cattle that had contracted the disease experimentally there has been no deviation in the nature of the lesions from the classical type previously described by those who have studied this affection. The natural resistance toward the contraction of this disease by individual animals is noted in the nature of the lesions, from an animal very slightly affected (steer 12) to that in which very nearly all of the normal cells of the liver have been replaced by fibrous connective tissue (steers 3 and 19.)

From the result of my examination of the organs of cattle fed on weedy hay and those fed on weed free hay, it is evident that the weed, *Senecio Jacoboea* is actively concerned in causing this affection.

## • CATTLE TICKS.

A number of cattle ticks taken from a cow in Nova Scotia were identified as *Dermacentor Variegatus*. This is the tick commonly known as the "Moose tick," and as far as I am aware has not previously been recorded as occurring on cattle.

## DISINFECTANTS.

There has been received during the year just ended but one sample of disinfectant for examination as to its germicidal value. This sample of disinfecting material was of proprietary origin and for the reasons stated in previous reports a detailed statement is not included under this heading.

## ANTHRAX.

During the past year material from nine suspected cases of anthrax have been examined, the bacillus being found in one instance only. In this connection it must be remembered that material taken from an animal some time after death may not show the *bacillus anthracis*, the causative agent, due to the putrefactive processes depriving the carcass of the necessary oxygen which this bacillus must have that it may propagate. In cases which have been dead some hours the material sent to the laboratory should be taken from the bloody discharge of the nasal or anal openings as the bacillus is here to be found in the spore stage.

## MALADIE DU COIT.

Acting on your instructions, it was my privilege in May last to meet and accompany yourself and your inspectors to the Macleod district in Alberta. I was also favoured with an opportunity to accompany Dr. Hargrave in his work in the Medicine Hat district where many more cases were seen and autopsies performed. Later I proceeded to Lethbridge where many cases were examined and post mortemed in conjunction with yourself, Doctors Warnock and Burnett.

My mission was primarily in connection with the causative agent of the disease. Buffard and Schneider, of Algeria, first described this disease as being caused by a trypanosoma which they named *Trypanosoma Epuiperdum*. This finding was, shortly after its announcement, confirmed by no less an authority than Nocard. Lingard, Imperial bacteriologist to the Government of India, also substantiates this finding



of Buffard and Schneider in a report on dourine issued in March, 1904, from his laboratory at Muktesar.

On the other hand we have Prof. Marek, of Budapest, and Prof. Ferdinand Kern, director of State Bacteriological Institutes, also of Budapest, who have been unable to confirm the presence of trypanosomata in cases of Beschalseuche, the term they use for *maladie du coït*.

I had not up to the time of my leaving for the west seen any mention of the work of these two last named authors and was therefore of the opinion that the trypanosoma described by Buffard and Schneider would be very easy of demonstration, provided a suitable case was obtained. However, in spite of this previously formed opinion, I took considerable trouble to prepare special stains and other necessary material that the trypanosoma, if present, might not elude my search. In justice to the observations made and recorded by the above mentioned authors and others, I do not wish to state that the *trypanosoma equiperdum* of Buffard and Schneider is not the cause of the disease manifesting itself in Western Canada. Suffice it to say repeated searches of the blood, vaginal secretion, synovia from the coxo-femoral joint; the brain, spinal cord and their fluids; the ovary, the mucous membrane of the uterus, &c., in fact almost every portion of the animal which would lend itself to the preparation of a smear, was at some time examined for the protozoan parasite in question, but these examinations resulted in negative findings. In connection with this microscopical work, I desire to state that all the cases from which material was obtained were of some standing and not the ones which from choice would be selected in view of our knowledge of diseases in animals and man caused by trypanosomata.

One case, Brucefield Prince, was given more attention than any of the others. He was first seen by me on May 12 at the ranch of his owner, where a careful clinical examination was made. Clinically this animal presented unmistakable symptoms, the knuckling gait, swollen sheath, and facial paralysis involving both the upper and lower lips and the ear. There was an ophthalmitis of the right eye, the membrane nictitans covering the lower third. This stallion was taken to the police barracks at Macleod, that an opportunity for a thorough examination of his blood and other body fluids might be obtained. Quantitative blood counts did not reveal a marked variation in the number of cells from those found in horses under ordinary conditions. An attempt to show the presence of the trypanosoma in the superficial circulation was made according to the method of Capt. Rogers\* without success. During my stay in the Medicine Hat district this stallion was sent to Lethbridge, a distance of forty miles, in the hope that the trip would cause an eruption of fresh plaques, but the fatiguing journey did not accomplish the desired object. From the time I first saw this stallion to the time he was destroyed at the quarantine ground, covered a period of only fourteen days, and this was hardly sufficient, considering the maximum duration of this disease. Previous to destroying this animal, however, a number of flasks which had been prepared at the laboratory in Ottawa were partially filled with blood and defibrinated. These flasks were hermetically sealed and brought to the laboratory with me on my return. Dogs were inoculated with varying amounts, but none showed any general or local disturbance during the succeeding four weeks which they were under observance, and at autopsy did not show any lesions or variations from the normal. The last flask of blood opened at the laboratory six weeks after being drawn was still sterile. I merely mention this to indicate the possibility of taking blood in the field under adverse conditions and transporting it over a great distance and still have it uncontaminated from outside sources. From the report of Buffard and Schneider it is not surprising that this blood failed to give results on inoculation, as it was their experience that after forty-eight hours the blood of an affected animal would not infect dogs.

Autopsies were held on one hundred and sixteen horses, of which two were stallions and one a gelding of doubtful history said to have been castrated on account of

\* 'London Lancet,' July, 1904, page 1,904.



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being affected with this disease, although the affection had not been positively diagnosed as such prior to the castration. This gelding was the only case which presented any deviation from the autopsy findings on all the other horses examined, and in fact was the only case presenting a condition of the spleen closely resembling that described by Lingard as being characteristic of dourine in India.

The clinical manifestations of this infection comprise a feature of the disease with which I have had but little experience, and therefore I deem it inadvisable for me to make any observations in this connection.

With the pathological lesions I have endeavoured to make myself familiar, and will therefore briefly indicate the conditions found at autopsy. All cases upon which it was my privilege to hold post mortems were destroyed on account of their presenting evidence of being affected with the disease, and with one or two exceptions were of long duration.

On incising the skin the subcutaneous connective tissue is seen to be of a very yellowish tinge, there being very little fat present. The muscles are somewhat pale, but otherwise appear normal.

On removing the hind-leg at the coxo-femoral joint considerable oedema is noted about the joint ligaments and the ligamentum teres. The ligamentum teres is not of normal size in cases of some duration. The articulatory surfaces of this joint, particularly that of the acetabulum, show in the majority of cases a distinct ulceration, usually somewhat triangular in shape and in one instance each side of this irregular triangle was one inch in length. The synovial fluid shows no alteration either in colour or consistency.

On opening the abdominal cavity, fluid was invariably present in which were seen numerous nematodes, *filaria papillosa*,—these however, are usually met with in horses kept under range conditions and therefore bear no special relationship to the disease under consideration.

The connective tissue in the abdominal cavity has the same yellowish tinge noted in connection with the subcutaneous connective tissue. The mesentery also exhibits this peculiar coloration. The intestines are pale and on their serous surface evidences of a previous inflammatory condition are present.

The spleen is of a grayish colour and the surface presents many petechial spots. In consistency the spleen is soft and flabby, pitting on pressure, the pit not resuming its natural position on the removal of the finger. In size it is about normal. The spleen of the gelding above referred to was about four times its normal size and very soft and friable. The colour was that of the normal organ.

The liver appears very much shrunken in size, in some cases appearing to be but half that of the normal organ, and is of a much darker colour than is the case in horses not suffering from this disease. The organ is very firm with no evidence of cirrhosis. The capsule of the liver usually presents evidence of an old inflammatory process.

The kidneys show no marked alterations.

In the mares the vaginal mucous membrane is pale and of a leaden hue with some scars. There is an oedematous condition of the os, but otherwise nothing abnormal is noted. The uterus is usually of a leaden colour and the mucous membrane oedematous, in some cases the oedematous folds were very pronounced, increasing the size of the uterus considerably. The ovaries were invariably cystic, though I am not prepared to assert that this was due to the infectious process under discussion. None of the mares upon which autopsies were held had recently shown a profuse vaginal discharge indicating that all cases examined were more or less chronic.

In the two stallions the general lesions were those described above. In addition there was an atrophy of the testicles amounting in one instance to the almost complete absence of testicular tissue. In one of these stallions, Brucefield Prince, there was a diffuse oedematous swelling of the sheath. No marked changes were noted about the penis save a slight roughness of the urethra.







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The lumbar portion of the cord was examined in a large number of cases and revealed no well marked lesions.

As to the microscopic lesions found in the various specimens preserved and brought to the laboratory, I do not feel that I can at the present time add to what has already been written on this disease. I have, however, in the various sections stained for trypanosomata been unable to detect any body which would lead me to believe that they or their involution forms, as at present understood, existed in the material examined.

I append hereto a table prepared at my suggestion by Dr. J. C. Hargrave, of Medicine Hat. This table gives the weights of the different organs in twenty-one cases examined by him at autopsy. For the purpose of comparison, I append the weights of the organs of two geldings killed on account of being affected with glanders (p. 74).

## POULTRY DISEASES.

A number of fowls have been received at the laboratory during the past year, with the request that we determine the cause of death in each instance. In many cases the difficulty has been found to be due to a form of indigestion caused by over-feeding with a ration too rich in starchy material accompanied by too little exercise. In a number of instances the changing of the ration and limiting the amount of feed, with an increase in the amount of exercise, has wholly overcome the difficulty.

Tuberculosis is still a factor contributing to the death of fowls, and is one which poultry raisers should take every care to eliminate.

Intestinal parasites, including round worms and tapeworms, have been found, and the elimination of these parasites from poultry yards will lead to increased profits for the poultryman.

At your request, Mr. Elford, chief of the poultry division, Mr. Graham, poultry expert at the Ontario Agricultural College, and Mr. L. H. Baldwin, of Deer Park, Ont., visited the laboratory to determine whether or not we could render any service in the determination of the cause of 'white diarrhoea' in chickens. A thorough discussion of the subject, coupled with the information I was able to gather concerning the history of the affection from these gentlemen, led me to offer the opinion that the cause of the difficulty was in a large measure due to insufficient ventilation of the rooms in which the chickens were artificially hatched. To supply this fresh air the system which is to be incorporated in the new stable under construction was advised in view of the fact that a great deal of fresh air is required to supply the oxygen necessary for the lamps used in heating the machines together with that required by the eggs in the incubating chambers.

The opinion then given as to the cause of this affection has been substantiated by information obtained from various breeders of poultry, and I am still of the opinion that the ventilation of the rooms in which the artificial incubation is carried on, and the vitality of the eggs used, are responsible for the trouble rather than to a disease of an infectious nature. The care of the chicks after removal from the incubator may assist the causes already mentioned in hastening a fatal issue.

## ENTERO-HEPATITIS IN TURKEYS.

There have been received at the laboratory a number of turkeys affected with entero-hepatitis, sometimes called black-head from the fact that the whole head of the bird turns black during the course of the disease. The affection was first described by Dr. Theobald Smith, in 1895, when chief of the Division of Pathology of the United States Bureau of Animal Industry. His report, which deals with the history, spread and cause of the affection, describes the parasite as an amoeba (*amoeba meleagridis*), which invades the system, causing an entero-hepatitis.

This parasite alone is undoubtedly the cause of the great decrease in turkey raising in Canada during the past few years resulting in the scarcity and high prices



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at the present time. I have found the parasite in the livers and caeca on various occasions in material which has been received at the laboratory for examination. From the pressure of other work it has been impossible to take up this subject very fully although it is one which should be investigated with a view to the eradication of the affection.

Individuals interested in the raising of turkeys should, if their flocks are now free, take such steps as will insure their freedom from this devastating affection. This can probably best be done by introducing all new stock through the egg and not through the medium of live birds as is usually the case. If the disease has gained a foothold in the flock, birds which are diseased should at once be killed and the quarters which they have frequented should be disinfected thoroughly. The range contaminated by affected birds should be ploughed late in the fall.

#### THE BIOLOGICAL LABORATORY.

In 1902, this laboratory made its beginning in temporary quarters at the Imperial Building on Queen Street, in the heart of the city. Plans were prepared and operations at once commenced in the erection of a suitable building for laboratory purposes on grounds connected with the Experimental farm. This building has now been completed and a brief description is not out of place in this connection.

That a better idea of the structure may be obtained, I present a plan of the ground floor together with a photograph of the exterior and one of the interior of the main laboratory.

On the ground floor are situated the office, (1), the main laboratory (3), and a room (2), for the use of the laboratory assistants, a portion of which will later be used for special work where a north light is not required. Reference to this floor plan shows that the ground floor is exceptionally well lighted and especially is this the case with the north side of the building, an essential feature where microscopic work is required.

The basement contains rooms of the same size as those on the ground floor. One, that directly under the office, is fitted with a sink and is used for post mortems on small animals and the examination of material which may be sent for diagnosis. The arrangement is such that anything for examination can be passed through the window, the sill of which is only a few inches above the ground on the outside, to the table without carrying the material through any portion of the building. The room under the main laboratory supplies space for the gas machine and I anticipate that it will soon be possible to remove all of the toxine work to this room after the necessary fittings are placed. The room under (2), contains the heating apparatus for the building and a large stove used as an incinerator in which all material of an infectious nature received at the laboratory is destroyed.

In the attic are situated the photographic and dark rooms. The photomicrographic apparatus is located in the hall, and all appointments have been studied to reduce as far as possible unnecessary travelling to and from the dark room. There is also a large room at the end of the hall in which is now stored the nucleus of a museum. This museum will, I anticipate, be one of the features of our laboratory, as it will contain material for demonstration purposes in connection with the more common affections with which we have to deal. The north room in the attic is now used as a storeroom, which purpose it serves admirably.

The main laboratory (3 on the ground floor) deserves perhaps a fuller description than any other room in the building, as it is the one in which the major portion of the work is now carried on. The floor plan referred to and the photograph show the arrangement of the tables and sinks. The incubators are placed on a raised stand opposite the entrance. The tables are higher than those usually seen in laboratories devoted to similar work, being forty inches from the floor. This height enables one working with a microscope to stand with ease, and if the examination is a long one



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a stool may be used. Another feature of the ground floor is the manner in which the doors are hung. All doors are supplied with spring hinges and swing both ways. This feature insures the closing of all doors, and avoids the drafts which otherwise are so difficult to eliminate.

The equipment of the laboratory needs no special mention in this connection, save the statement that it has been my constant aim to procure apparatus suited to the various requirements of the work, at all times avoiding unnecessary expense.

In conclusion, I desire to express my appreciation of the interest which you have constantly manifested in the work of the laboratory, and the encouragement given me in making this institution an integral part of the health of animals service.

I have the honour to be, sir,

Your obedient servant,

CHAS. H. HIGGINS,  
*Pathologist.*

The Veterinary Director General,  
Ottawa.

A. E. MOORE, D.V.S.

OTTAWA, October 31, 1905.

SIR,—I have the honour to submit to you this, my annual report, for the year ended October 31, 1905.

### GLANDERS.

During the year I have tested with mallein, 204 horses, 38 of which reacted and were destroyed. I also killed without testing, 8 horses showing marked clinical symptoms of the disease.

There were twenty-eight ceased reactors which at your request I held from last year for further supervision. I retested them in due time, and fourteen gave a characteristic reaction again, and were destroyed, the other fourteen did not react and were released.

The reacting of these ceased reactors after the lapse of a year, would indicate that the curative effect of mallein is very unreliable. These 28 horses were completely isolated from others during the whole time that they were under supervision, so there was no possibility of reinfection from other sources. The temperature of horses that become permanent ceased reactors has usually never reached an extremely high degree at the first test. It has been my experience that if the temperature reaches over  $104\frac{1}{2}^{\circ}$  the animal is not apt to become a permanent ceased reactor. None of these cases that reacted at the end of the year showed the least sign of clinical symptoms at any time. In fact none of the horses that we retested had ever shown any clinical symptoms.

I performed careful postmortems on some of these ceased reactors, and in every case found very slight lesions of glanders, nearly all of which were confined to the lungs. In most cases the lesions were encysted. Dr. Higgins inoculated guinea pigs with these lesions and obtained positive results.

As most of the lesions were in an encysted form and as none of these horses ever developed clinical symptoms, it would appear that whereas the repeated injection of mallein is not reliable as a cure for glanders, it seems to check the disease to a certain extent. I know of many other cases which have been ceased reactors for two years and over and still do not show any clinical symptoms.



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In co-operation with local inspectors, I have dealt with several large outbreaks of glanders in the province of Quebec, especially in the lumbering districts. Their custom of employing the farmers' horses for the winter months, the close stabling, and the unsanitary conditions, all favour the spread of the disease.

From the information obtained in dealing with these outbreaks, I am positive that glanders has existed for many years in both the provinces of Ontario and Quebec. It is gratifying, however, to find that where we have dealt with this disease a marked improvement is noticed. In the horses of one large firm where there are from 800 to 1,000 head employed and where glanders existed to a large extent, I have not seen a single case for many months. In this city where glanders was very prevalent two years ago, only a very few cases were reported this year.

#### SHEEP SCAB.

Acting on instructions from you, I proceeded, in December, 1904, to the county of Lambton to try and locate the origin of some cases of sheep scab detected among animals shipped from that district. I visited Inwood, Watford and Thamesville, and obtained the names of all the farmers who sold lambs in these particular shipments. With the assistance of Drs. J. H. Tennent and M. B. Perdue, all these farms were visited, and the exact origin of the disease located.

On January 1, at your request, I went to Buffalo to obtain all the information possible regarding the shipment of Canadian sheep to that market. Through the kindness of Dr. B. P. Wende, who conducted me through the stock yards, I received much valuable information. On my return from Buffalo I visited the customs ports at Bridgeburg and Niagara Falls for the purpose of ascertaining the facts regarding live stock exported at these points to the United States. The important information then secured was duly reported to you.

During our visits to the sheep owners of Lambton and Middlesex counties we obtained information which led to our finding other centres in both these counties and also in Kent. We traced the disease to the flocks of several prominent breeders, one especially having spread the disease to a large extent.

In the early spring I again visited the counties of Middlesex, Lambton and Kent, and with Dr. Tennent made a systematic inspection of all contact flocks, and any that were reported as suspicious. We quarantined and ordered the treatment of all contact sheep as well as of the diseased ones. From the one breeder above mentioned we traced the disease to thirty farms, as well as being obliged to quarantine thirty-six flocks for being in contact with his diseased sheep.

The affected flocks were quarantined during the winter and early spring when it was too cold to dip, being kept confined to as small quarters as possible until the weather moderated and we were ready to superintend the dipping.

You thought advisable that the dipping be done in our presence, and this I consider was of the utmost importance. The lime and sulphur dip was used. Both diseased and contact sheep were dipped twice at an interval of from ten to twelve days. After the first dipping the sheep were returned to their pens, these having been in the meantime disinfected. They were kept there until after the second dipping, when they were immediately put in fresh pens or turned to pasture. When the weather was warm enough they were all turned to pasture away from the infected premises, and left there all summer. This plan was adopted to prevent reinfection from the infected premises, which were sometimes very difficult to properly disinfect.

In July I revisited all the farms and inspected closely all the sheep that we had dipped and none showed any symptoms of scabies, their skins were in perfect condition as the dip killed all ticks and lice as well as the acari. Many of the owners were enthusiastic over the dipping and have constructed vats and intend doing it every year.

I then recommended a release from quarantine of all farms dealt with under my supervision.



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The following is a synopsis of the Sheep Scab I dealt with during the year:—

Province.	County.	Number sheep quarantined where disease was found.	Number farms quarantined where disease was found.	Number contact or suspected sheep.	Number farms quarantined for contact sheep, or suspected.	Origin of disease.
Ontario	Middlesex....	322	16	250	14	Unknown.
"	Lambton....	209	17	25	9	"
"	Kent.....	61	5	49	6	"
"	Wentworth...	19	2	.....	.....	From Middlesex Co.
"	Huron.....	36	3	11	1	"
"	Grey.....	63	2	.....	.....	"
"	Perth.....	13	1	.....	.....	"
"	Simcoe.....	.....	.....	9	1	"
"	York.....	35	1	.....	.....	"
"	Haldimand ..	.....	.....	98	5	"
"	Norfolk.....	.....	.....	71	5	Unknown.
"	Frontenac...	75	2	.....	.....	From Lennox Co.
"	Lennox .....	58	1	.....	.....	Unknown.
"	Wolfe Island.	24	1	.....	.....	From N. York's state.
Quebec	Berthier.....	39	1	.....	.....	From Middlesex.
	Total...	954	52	513	41	

Total number sheep dipped ..... 1,467  
" " farms quarantined..... 95

TUBERCULOSIS.

During the year I have tested with tuberculin the following cattle :—

	No. tested.	No. reacted.	Healthy.
For export to South Africa.. . . .	66	1	65
" Japan.. . . .	21	3 and 1 sus-	17
" United States.. . . .	2	picious.	2
	—	—	—
	89	4 and 1 sus-	84
		picious.	

All the reactors were ear-marked. I also ear-marked at four different farms, 17 reacting cattle that were tested by local veterinarians.

MANGE IN HORSES.

Only a few cases of mange in horses have come to my notice this year. The outbreak in the vicinity of Vankleek Hill and Hawkesbury, Ont., where the disease was very prevalent last year, has been about checked. There were a few scattered cases outside the district we visited a year ago.

While I was at Chicoutimi regarding glanders, I examined several cases which were quarantined by Dr. Thos. R. DuChêne. I also examined several cases that were quarantined by Dr. Charles McEachran at Chambly, Que.

MANGE IN CATTLE.

As a result of a report received by you from Dr. M. C. Baker, that cattle fed at the Wiser distillery at Prescott were found affected with mange on their arrival at the C.P.R. stock yards in Montreal, I visited Prescott, but there were no cattle left. I



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ordered the stables that the diseased cattle occupied as also the yards and chutes used in their shipment to be thoroughly cleansed and disinfected.

SUSPECTED MANGE IN CATTLE.

I visited a farm near Carleton Place, Ont., where cattle were reported as being affected with mange, but found the cattle to be suffering from ring worm and lice.

OTHER DISEASES.

*Suspected glanders.*—Several cases were reported which I found due to distemper, purpura haemorrhagica, and diseased teeth.

*Suspected Black Quarter.*—I investigated an outbreak at Fenelon Falls, Ont., of a disease which somewhat resembles haemorrhagic septicaemia. Nine cattle died. I advised isolation of the sick, and the carcasses all burned. After this was accomplished the disease stopped.

In April, 6 cattle died on a farm near Balmoral, Ont. At the time of my visit no animals were sick or recently dead, so I was unable to arrive at any definite diagnosis.

From time to time during the year I have co-operated with the local inspectors in settling special cases. This work has occupied a considerable portion of my time.

I have the honour to be, sir,  
Your obedient servant,

A. E. MOORE,  
*Inspector.*

The Veterinary Director General,  
Ottawa.

M. C. BAKER, D.V.S.

MONTREAL, October 31, 1905.

SIR,—I beg to submit my annual report for the year ending to-day.  
During the year the following animals were inspected by me and passed for export at the Canadian Pacific Railway stock yards, Hochelaga.

	CATTLE.				SHEEP.	
	N. West.	Ontario.	U. S.	Mexico.	Canadian.	U. S.
November, 1904.....	5,576	2,045	65		6,402	
November to May 1905.	60	32			2,550	
May.....	987	5,840	2,550		499	1,078
June.....	1,253	4,905	3,511	141	2,460	
July.....	6,409	3,644	2,298		2,507	
August.....	9,747	4,382	2,739		2,532	151
September.....	10,643	3,603	1,808		5,304	123
October.....	13,710	1,467	2,044		2,212	
Totals.....	* 48,385	25,918	15,015	141	24,466	1,352
Total cattle for the year..... 89,459						
Total sheep for the year..... 25,818						

\* 22,242 more than for year ending October 31st, 1904.



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Of these, 8,664 head of cattle, 6,878 sheep, were shipped via Boston, and 1,934 head of cattle and 126 sheep via Portland, one bull and 274 sheep from Vermont, and 104 Canadian cattle were shipped to South Africa. 978 Canadian cattle were shipped to Havre, France.

During the year 154 head of cattle and 45 sheep were rejected as unfit for shipment.

Thirty-one cases of actinomycosis, nearly all from the Northwest ranches. 38 mangy, all in ranch cattle and shipped from the west last year, part of these were inspected in November, 1904, the balance were ranch cattle that had been fed in a distillery stable during the winter. These cases were reported at the time and every precaution taken to prevent the spread of the disease. This season only one case with a slight suspicion of mange, he was sent to the slaughter house. 6 cattle were totally blind, the balance of the cattle 74, and the sheep were suffering from lameness and injuries.

In November, 1904, I visited Megantic county and found a number of cases of contagious abortion in cows, recommended thorough disinfection. I was sent to Berthier county this summer to deal with an outbreak of scab in sheep, these were dipped twice, the premises thoroughly disinfected. The disease was entirely cured. I also, at the same place tested with tuberculin, 5 cows that were to be exported to Japan, no reactions.

I was also sent to Shawinigan Falls to investigate a supposed outbreak of hog cholera, found the disease to be due to local causes.

I am happy to be able to report that the stock yards at Hochelaga, have been very much improved, a solid plank floor has been put down, and when a few alterations are made in the sheds, which the railway authorities have promised will be done, the yards will be in first rate condition.

I have the honour to be, sir,  
Your obedient servant,

M. C. BAKER,  
*Inspector.*

The Veterinary Director General,  
Ottawa.

CHARLES McEACHRAN, D.V.S.

MONTREAL, October 31, 1905.

SIR.—I beg to report that during the year commencing November 1, 1904, and ending October 31, 1905, there were inspected, found free from disease, and exported from Canada via the port of Montreal, 432 head of horses; seventeen horses were held back, 8 having strangles and 9 showing symptoms of influenza.

During the same twelve months via the port of Montreal, 694 horses were imported to Canada, viz.: 404 Clydesdales, 223 ponies, 40 Hackneys, 23 Shires, 2 French Coachers, 1 Suffolk Punch, and 1 English thoroughbred. All were inspected on their arrival, found free from disease and allowed to be landed.

From the 4th of January, 1905, until the 31st of October, I inspected at the market places here and found free from disease, 15,338 head of cattle, 18,632 sheep, and 46,279 hogs. During the past ten months I have visited regularly and inspected the horses in the sale stables and on cab stands in Montreal. I found three horses showing the clinical symptoms of glanders and had them destroyed. Twenty horses were tested with mallein, ten reacted to the test and were shot; the others were retested



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within six weeks, were found to be free from the disease and set free from quarantine. During 1905, I came across two outbreaks of mange in horses. In Chambly Canton, 7 horses were affected, and in a dealer's stable in Montreal 2 bad cases were found. In both instances the premises were put in quarantine, the animals under my supervision were treated, and when considered cured, the premises, utensils, &c., were thoroughly disinfected.

I have the honour to be, sir,  
Your obedient servant,

CHARLES McEACHRAN,  
*Inspector.*

The Veterinary Director General,  
Ottawa.

B. A. SUGDEN, D.V.S.

MONTREAL, October 31, 1905.

SIR,—I have the honour to report to you upon the inspection of live stock offered for export at the Grand Trunk Stock Yards, Montreal, for the period extending from November 1, 1904, to October 31, 1905.

During this time there were inspected and passed for shipment at the port of Montreal:—

Cattle, 42,772 head, of which 2,636 were from the United States. Sheep, 14,524 head, of which 3,188 were from the United States. Hogs, 150. Buffalo, 1 buffalo bull, shipped to South Africa.

The following Canadian stock were inspected and passed for export via Portland and Boston:—

Cattle, 22,944. Sheep, 20,868.

From the above were rejected 65 head of cattle of which 37 were affected with actinomycosis and 5 with mange; the balance were suffering from sore feet or injuries received during transportation.

There were also rejected 72 sheep on account of injuries or sore feet.

During the same period 25,147 head of United States cattle and 28,363 United States sheep passed through the yards in bond for Portland and Boston for shipment to British ports.

During the year I visited Abbotsford, Lacolle and Compton and tested with tuberculin, 12 head of cattle for export to the United States.

Two reacted, 1 at Abbotsford and 1 at Compton.

I have the honour to be, sir,  
Your obedient servant,

B. A. SUGDEN.  
*Inspector.*

The Veterinary Director General,  
Ottawa.



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J. H. FRINK, V.S.

ST. JOHN, N.B., October 31, 1905,

SIR,—I beg to submit my annual report, covering work performed at this station.

## INSPECTION OF LIVE STOCK FOR EXPORT TO GREAT BRITAIN.

*Cattle.*—30,903 cattle were inspected, 2 were condemned for actinomycosis, one from intestinal disease, one from cerebritis; thirteen were condemned for lameness and injuries, and two detained; 8,893 United States cattle were comprised in this number. The usual conditions prevailed regarding inspection. The stock-yards received marked attention from the railway authorities, and they were maintained in excellent condition during the winter, except the month of April, when the mild weather made it impossible to keep them to the standard, and the animals, after inspection and feeding, were allowed to proceed on board ship without detention. Considerable improvement is noticed in stock cars of Canadian Pacific Railway, being much larger than formerly, and fewer animals are placed in the cars, with the result that cattle arrive in much better condition for shipment. Animals are not infrequently bruised when unloading, due to defective landing platforms from the cars, and it is noticeable that cars fitted with landing platforms, hinged to the car doors, afford the safest means of exit. This may seem a comparatively small matter, but it can be safely said that very great injury must ensue to shippers from bruising of animals. A record was kept concerning the places from which cattle have been shipped for export from Ontario and the Northwest, and it would appear from this that the greatest export centres are Toronto, Woodstock, Ingersoll, Drumbo, Embro, Innerkip, Teeswater, Ontario, and Cayley, in the Northwest. A careful examination was made of Northwest Territories cattle for mange, but this was not discovered in any of them. The general class of this last-named was inferior, and no doubt made worse by the long railway haul, and nervousness under restraint. The cattle traffic at this port is somewhat congested, owing to all cattle-carrying steamships having the same sailing date (Saturday), and not infrequently three or four shiploads arriving on or about the same day. The stock-yards not having sufficient capacity for such large numbers, discretion has to be permitted in the matter of time allowance. This necessitates inspection work on Sunday through the whole season, and it might be very well dispensed with, at least in part.

*Export to South Africa.*—276 cattle were shipped to South Africa by liners running from this port. They were made up largely of milch cows, and were as a lot inferior in size and condition.

*Sheep Inspected for Export.*—16,304. Of these, 3,087 were United States sheep. Fourteen sheep were condemned for injuries received in transit, and twenty-nine sheep arriving in dying condition were ordered destroyed. As usual, ophthalmia was present to a considerable extent in Canadian sheep forwarded. It is possible this condition may arise from ammoniacal fumes arising from excreta, as sheep cars are not infrequently unclean and manure and litter is often four or five inches deep in car bottoms. The advisability of having these cars cleansed and cleanly bedded before shipment, may be well considered. As animals affected with ophthalmia suffer severely and of necessity lose flesh and condition. It is the custom to feed sheep very scantily in stock-yards here. It would be to the advantage of shippers if they received a more generous allowance of food.

*Horses for Export.*—213; 68 were shipped to Glasgow, and 145 to South Africa. Of this latter lot, 24 were classified as mules, and 37 ponies from Mexico. All were inspected and found free from disease.



EXPORT CATTLE TO UNITED STATES.

Twenty-four milch cattle were inspected and tested for shipment to the United States, coming from the vicinity of Sussex, N.B., one reacting animal was earmarked permanently, and shipment of it forbidden.

INSPECTIONS IMPORT LIVE STOCK. (CATTLE.)

Twenty-six head of pure-bred cattle were imported from Great Britain, two born in quarantine. These animals were kept in quarantine the prescribed period, tested with tuberculin, and at the termination were discharged. Four animals reacted to the tuberculin test and were permanently earmarked.

Of the breeds imported, nine were West Highland cattle, nine Shorthorns, three Galloways, five Polled Angus.

*Horses.*—Forty-one pure-bred horses were imported from Britain, 33 Clydesdale and Shire, 6 Hackneys, 2 Thoroughbreds. All were in good health, and with one exception were provided with the necesasry health certificates; were allowed to proceed.

IMPORTS FROM UNITED STATES.

Ten head of cattle (pure-bred) were imported from United States. One animal from New York state without satisfactory tuberculin chart and certificate, was detained in quarantine one week, tested, passed and allowed to proceed. Some 5 head quarantined 15 days and allowed to proceed—sheep 1, goats 2.

Live Stock exported from Port of St. John, N. B., to Great Britain from November 1, 1904 to date.

Canadian cattle.. . . .	21,734
"    sheep.. . . .	13,217
"    horses.. . . .	68
United States cattle.. . . .	8,893
"    sheep.. . . .	3,087
	<hr/>
	46,999
	<hr/>
Total cattle shipped to Great Britain.. . . .	30,627
"    sheep        "        "        . . . . .	16,304
"    horses        "        "        . . . . .	68
Export to South Africa—	
Canadian cattle.. . . .	276
"    horses.. . . .	108
Mexican horses.. . . .	37
	<hr/>
	421
	<hr/>
Export to United States—	
Canadian cattle.. . . .	23
Live stock imported from Great Britain—	
Cattle.. . . .	26
Horses.. . . .	41
Live stock imported from United States—	
Cattle.. . . .	10
Swine.. . . .	5
Sheep.. . . .	1
Goats.. . . .	2



## SESSIONAL PAPER No. 15a

## CONTAGIOUS DISEASE.

*Mange*.—Last year quite a serious outbreak of mange in horses occurred in this vicinity, and it was thought from all evidence, that it had been eradicated. It first made its appearance this year in a number of horses which had returned from a lumber camp in the interior. The stables had been cleansed and disinfected, and the different animals placed under quarantine and successfully treated. The difficulty in dealing with this disease is the concealment of a case or two, and as a result a general infection of animals with which it may come in contact. Immediate notification by the owner or agent of the presence of the disease to the inspector—in accordance with the Act—would prevent this.

*Tuberculosis*.—The testing of animals with tuberculin has been somewhat restricted. The only animals tested by me being those in quarantine at St. John, arriving there from Great Britain and the United States, a carload of cattle for export to the United States, and the testing of cattle at the experimental farm, Nappan, Nova Scotia.

At this establishment sixty-three animals were tested, 45 were classified as diseased, 2 suspicious.

## GLANDERS.

A letter was received by me from the Provincial Commissioner of Agriculture stating that information had reached him that an animal was suspected of glanders in Charlotte county, New Brunswick. Investigation revealed the fact that the animal had paralysis of the pharynx, due to cerebral disease, the inability to swallow, with the food being returned through the nostrils. This condition, with the gradual wasting of the animal, excited fear and suspicion, which was unfounded.

I have the honour to be, sir,  
Your obedient servant,

JAMES H. FRINK,  
*Inspector.*

The Veterinary Director General,  
Ottawa.

WILLIAM JAKEMAN, D.V.S.

HALIFAX, N.S., October 31, 1905.

SIR,—I beg leave to submit the following statement of animals inspected by me during the past twelve months.

On instruction by telegram from you, on April 5, 1905, I visited Truro, N.S., to examine horses which arrived from Boston and said to be diseased. I did so and learned that of seven horses from Boston, two had died from what I believe to be pneumonia, the remaining five were suffering from influenza.

April 6th. On instruction by telegram from you requesting me to visit Bear River, N.S., and investigate a disease said to exist there. On my arrival there, I visited Joseph Warren and learned that two cows died the previous week from impaction of the third stomach.



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EXPORTS from Halifax to the following countries:—

	Cattle.	Horses.	Sheep.	Swine.
Great Britain.....	600	.....	.....	.....
Bermuda.....	20	65	898	14
West Indies.....	.....	5	67	.....
Jamaica.....	23	10	278	.....
Newfoundland.....	24	3	13	13
United States.....	.....	7	.....	7
Trinidad.....	.....	.....	27	4
Barbados.....	5	10	12	.....
Total.....	672	100	1,295	38

IMPORTATION at Halifax from the following countries:—

	Horses.	Mules.
Great Britain.....	33	..
United States.....	9	..
Bermuda.....	..	3
	42	3

I have the honour to be, sir,  
Your obedient servant,

WM. JAKEMAN,  
*Inspector.*

The Veterinary Director General,  
Ottawa.

A. A. LECKIE, M.R.C.V.S.

CHARLOTTETOWN, P.E.I., October 31, 1906.

SIR,—I beg to inclose the following report of work for year just ending, November 1, 1905.

28 horses, 1,296 cattle, 4,400 sheep, 10 swine, have been exported, distributed as follows:—

- 18 cattle, 2,049 sheep, to England.
- 16 cattle to the West Indies.
- 5 horses, 1 calf, 6 sheep, to the United States.
- 23 horses, 1,261 cattle, 2,345 sheep, to Newfoundland.

The outside work in connection with the Dominion government has been thus:—

On June 3, 1905, I received word from Ottawa to proceed to O’Leary to investigate a supposed outbreak of contagious disease among cattle. After a careful examination of the same, I came to the conclusion that the feeding was the cause of the trouble—a not quite sufficient amount of nutritious diet being provided,



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their chief sustenance being from salted straw and water. The water being given somewhat irregularly, on account of the storms, caused an increased quantity to be taken, causing acute diarrhœa, leading to dysentery. This was the condition in which I found the sick cow, which was at pasture. The other looked in good shape.

On July 14th. I received word to investigate a case which had been reported, suspected glanders, the animal the property of a gentleman at Middleton. On test with mallein she was considered suspicious, but, on retest, showed no reaction. This mare is an excellent case of neglected disease in frontal sinus. Had she been trephined earlier, the operation might have done some good. She has been able to raise her foal, which she certainly would not have done had she not worn a tracheotomy tube. She showed no symptoms denoting infectious or contagious disease.

During August of this year, I was called to see a cow, at East Royalty, supposed to have lump jaw. On examination, I diagnosed an advanced case of tuberculosis, and advised owner to have his herd tested, which he did. His brother also thought he would have his cattle tested at the same time. They were tested with tuberculin, and the result of the test is known at Ottawa. I have done my best to interest the local government of this island in this matter, but there seems to be no wish to deal with the trouble. Our city authorities have made a move in the matter, causing each one supplying milk to the city to show a clean bill per tuberculin test for each cow in use. This is an excellent move and will, at least, help to keep the dairymen on the watch for any sign of the disease.

So far as the tuberculin test is concerned, I wish to express an opinion with regard to its use. As a diagnostic, it is valuable to show (not that animals reacting are all affected) but a condition of constitution, which, in the presence of tubercular bacilli, would soon succumb to the disease. The animal which does not react will, to a certain extent be immune, at least for a time, as in vaccination for smallpox there are individuals on whom the vaccine does not take, these would be considered immune. As the tubercular test is therefore useful to show us the cows which would be the first to succumb, it will give the dairyman an opportunity to clear out those which show this weakness, and to build up his herd from the more highly vigorous cattle. Should the immunizing of cattle by the Von Behring method prove successful (it being a preventative serum, prepared with live culture) one of the grandest finds ever discovered will have fallen to the lot of the agriculturist. It seems to have been successful so far, with calves inoculated twice in the first six months of their lives, turned loose with tuberculosed cattle, kept in their midst for three or four years, on being slaughtered, showed no symptoms of the disease, while others in their midst, not vaccinated with the Von Behring vaccine, and slaughtered, were found tuberculosed. It certainly looks bright for the discoverer, and it is to be hoped that some one will be successful in producing some method of immunization, or way in which to deal with this disease, more suitable and easier to manage than we have at present.

I have the honour to be, sir

Your obedient servant,

ANDREW A. LECKIE,

*Inspector.*

The Veterinary Director General,  
Ottawa.



J. A. COUTURE, D.V.S.

ANIMAL QUARANTINE STATION,  
QUEBEC, October 31, 1905.

SIR,—I have the honour to transmit my annual report of the operations of the Pointe Lévis Animal Quarantine for the twelve months ending on the 30th of October last.

The total number of animals imported through this station is 518 being:—

Cattle....	52
Sheep....	342
Swine....	74
Goats....	17
Horses....	33

BREEDS OF THE ANIMALS.

The different breeds are represented as follows:—

*Cattle.*

Jerseys....	3
Galloways....	5
Ayrshires....	16
Shorthorns....	28
	<hr/>
	52

*Sheep.*

Leicesters....	5
South Downs....	17
Oxford Downs....	22
Cotswolds....	22
Dorsets....	23
Hampshires....	63
Cheviots....	70
Shropshires..	120
	<hr/>
	342

*Swine.*

Yorkshires....	21
Berkshires....	53
	<hr/>
	74

*Goats.*

Breeds unknown..	17
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*Horses.*

Carriage..	2
Welsh ponies....	2
Ardennais....	9
Clydes .....	20
	<hr/>
	33



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The animals have been imported by the following parties:—

*Cattle.*

Mrs. F. L. Cartwright, Napanee, Ontario, three Jerseys.  
 W. D. Flatt, Hamilton, Ontario, five Galloways.  
 R. R. Ness, Howick, Quebec, sixteen Ayrshires.  
 Sir William Mulock, Toronto, one Shorthorn.  
 Arthur Johnston, Greenwood, Ontario, two Shorthorns.  
 Robert Miller, Stouffville, Ontario, seven Shorthorns.  
 H. J. Davis, Woodstock, eighteen Shorthorns.

*Sheep.*

Robert Miller, Stouffville, Ontario, five Leicesters, eight South Downs, fourteen Cotswolds, five Hampshires, one hundred and two Shropshires.

John Milton, Marshall, Michigan, nine South Downs, eight Cotswolds, fifty-one Hampshires.

Henry Arkell, Arkell, Ontario, twenty-two Oxford Downs.  
 W. G. Appleby, Birmingham, Vermont, twenty-three Dorsets.  
 Robson Bros., Hall's Corner, New York, seven Hampshires.  
 Thos. Oliver, Maple Creek, Saskatchewan, seventy Cheviots.  
 John Dryden & Son., Brooklin, Ontario, eighteen Shropshires.

*Swine.*

D. C. Flatt & Son., Millgrove, Ontario, twenty-one Yorkshires.  
 Robert Miller, Stouffville, Ontario, two Berkshires.  
 W. H. Durham, Toronto, fifty-one Berkshires.

*Goats.*

Chs. Demey, Maisonneuve, Quebec, seventeen goats.

*Horses.*

Vesey Boswell, Quebec, one carriage horse.  
 M. Major, Quebec, one carriage horse.  
 Robt. Miller, Stouffville, two Welsh ponies.  
 Baron de Lepine, Quebec, nine Ardennais.  
 Agricultural College, Nova Scotia, twenty Clydesdales.

*Destination.*

Of these animals there went to the United States:—5 cattle and 98 sheep, and the balance, viz.: 47 cattle, 244 sheep and all the swine, goats and horses remained in Canada.

The province of Nova Scotia imported twenty Clydesdale horses.

The province of Quebec imported sixteen Ayrshire cattle, nine Ardennais horses, two carriage horses, seventeen goats.

The province of Ontario imported three Jersey cattle, twenty-eight Shorthorn cattle, 174 sheep.

The province of Saskatchewan imported seventy sheep.



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The quarantine grounds are in good order, the stables and fences are in good condition. However, some minor repairs would have to be done next year so as to keep everything in good condition.

I have the honour to be, sir,

Your obedient servant,

J. A. COUTURE,  
*Superintendent.*

P.S.—I may mention that eight cattle reacted to the tuberculin test.

J. A. C.

The Veterinary Director General,  
Ottawa.

W. H. PETHICK, V.S.

ANTIGONISH, October 31, 1905.

SIR,—I have the honour to submit a report of the investigations into the cause of the Pictou cattle disease, conducted at the government experimental station, Antigonish, during the year just ended. Before dealing with the experiments, which I have had the honour of conducting under your direction, I beg liberty to offer a few general remarks on the subject.

The early history of Pictou cattle disease, we must confess, is somewhat shrouded in mystery, but from careful inquiry of the older inhabitants, we learn that the disease first made its appearance in the town of Pictou about fifty years ago.

Mr. Connell, of the Customs Department, remembers the first outbreak. The older people interviewed all claim that the plant 'ragwort' (*senecio jacobea*) had by this time a footing in that town. They say that the weed was imported in ballast from Europe and landed at Hatton's wharf, and, at an early date, was believed to be the cause of the new cattle disease, and so firmly was this believed, that Mr. Gordon, who was then street commissioner, imposed a fine upon those who did not destroy the weed found growing in front of their lands.

We are told that from the town of Pictou, the weed spread to West River, thence to Greenhill, New Glasgow, Fraser's Mountain, Merigomish and along the gulf shore into Antigonish county as far east as Cape George. We are told that the disease followed, and in no instance did the disease overstep the weed limit, and where there was no weed, no disease existed.

Upon looking at the accompanying map, you will see the extent of the present weed area. The portion shaded, shows, where it exists as a troublesome agricultural weed, that is, in pastures and hay-fields, and as a stray plant along the roadside and railway, it probably extends over nearly the whole of Pictou and Antigonish counties, and is making some progress into the northern part of Guysborough county.

The spreading of the weed to a greater distance east of Pictou than to the west, is accounted for by the fact that the prevailing winds here in winter are from the northwest. The heavily shaded portion, indicates the territory where the cattle disease exists.

A notable feature in the spread of the disease is a tendency to remain stationary in a locality for perhaps a year or more, and then extend somewhat rapidly taking in a few more miles of territory, and again becoming stationary.

I have not an opportunity of obtaining very accurate statistics. Dr. William McEachran states in his report, that up to 1881 one thousand three hundred and ninety-



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six head of cattle had died, and during that year two hundred and three animals had succumbed. This seems to have been the greatest mortality in any one year to that date. Since then, if we can say that a considerable number of cases are not reported, we might estimate the average yearly mortality at two hundred head.

When this disease visits a farm, it remains for years, or, until 'ragwort' is eradicated, causing the loss of from one to six or eight head annually. On some farms, the total loss in fifteen or twenty years has exceeded sixty head; on some the entire stock has been lost, and upon restocking, has been lost again; on some the loss was so heavy, that stock-keeping had to be abandoned.

Heretofore the disease was believed to be confined to portions of Pictou and Antigonish counties, but in August, 1903, it was discovered near Souris, P.E.I. 'Ragwort' is also growing abundantly in this district, and from the evidence of farmers who have lost cattle, it is evident that the disease has during the last seven or eight years been accountable for the loss of sixty or seventy head in this locality.

Our suspicion that the disease also exists near Alberton, P.E.I., where 'ragwort' has also a footing, was confirmed last summer, and we have good reasons to fear that this troublesome malady exists undiscovered in localities, both on the island and mainland.

Although some valuable information has been gained through the investigations conducted at different times by Professor William Osler, Professor Adami and the late Dr. Wyatt Johnson regarding the morbid anatomy of the disease, the cause remained a mystery. The popular opinion that the disease was due to the eating of 'ragwort' had led to some feeding experiments being conducted under the supervision of Dr. William McEachran. These experiments, so far as they extend, gave negative results, and the plant was consequently pronounced innocent, and the old theory that the disease was due to some unknown contagion was adhered to.

Fortunately you visited eastern Nova Scotia in 1902 and realizing the disastrous effect of this disease upon the live stock interests of the affected counties, decided to establish an experiment station within the disease area where the disease could be studied, and feeding and other experiments conducted, and continued for a sufficient length of time to make the result conclusive.

You, sir, have already a perfect knowledge of the result, and indeed, every detail of the work at this station. But, the probability that this report may be read by many interested people, and as it seems to me very important that the most sceptical should be convinced that the cause of Pictou cattle disease has at last been settled beyond a doubt, to the end that a united effort be made to exterminate the plant 'ragwort,' which besides being accountable for cattle disease, grows at the expense of useful fodder plants, and is an enemy of the agriculturist in every sense of the word, I beg leave to give a detailed account of the different experiments, which I have had the honour of conducting under your direction.

Before doing so, I would say that many different theories have been advanced; both by the learned and unlearned, regarding the cause of Pictou cattle disease. Some claim that the causative agent exists in the soil of certain localities, in the form of a micro-organism. Others, that it exists in the body of the animal. It was thought by many that infected stables were accountable, while others were of the opinion that actual contact was necessary for its spread. A few pointed to the possibility of inoculation being accountable, but by far the greater number looked upon 'ragwort' with suspicion, but these again were divided, some claiming that the injury was done while the animal was at pasture on 'ragwort' land; others that the weed was only injurious when mixed with the hay and fed during the winter months. A few believed that the plant, if cut before flowering, was innocent. Nearly all were of the opinion that good or poor feeding rendered animals more or less liable to the disease, many claiming that good feeding gave complete protection.

Your wisdom in investigating the cause, with each of these theories in view is



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obvious, and those who will read this report to the end will find their opinion either confirmed or negatived by a thorough and practical experiment.

In order that the records of the experiments may be the more complete, I have thought well to copy in part from my report of last year's work, and have added thereto the additional information gained, giving the results to date.

#### EXPERIMENT No. 1.

The object of this experiment was to ascertain whether the disease was communicable through the medium of infected stables, if so does feeding good or poor render the animal more or less liable to contract the disease.

In this test sixteen animals ranging from one to five years old were employed. They were housed in an old frame stable, in which thirty-six head of cattle had previously suffered from Pictou cattle disease. The building was not disinfected, or any precautions taken to guard against infection from that source.

These animals were fed upon hay absolutely free from 'ragwort' imported from Quebec.

These were subdivided into lots of four, and the following daily ration allowed.

A—D, full hay ration with four pounds grain mixture.

E—H, full hay ration with two pounds grain mixture.

I—L, full hay ration without grain.

M—P, restricted allowance of hay without grain.

While all these animals were during the first summer pastured on land comparatively free from 'ragwort' this season eight members of the herd, namely, (A), (B), (E), (F), (I), (J), (M) and (N) were grazed, not only upon weedy pasture, but on one in which no less than fourteen head of cattle had died of cattle disease within five months.

All the members of this herd remained in perfect health during the entire test which extended over twenty three months, the younger ones growing nicely and looking slick and thrifty. While all were at the time of sale in good market condition, those which had received a grain ration were prime butcher's cattle.

In accordance with your instructions, all these animals except (C), (E) and (F) which were held over because of advanced pregnancy were slaughtered between October 10 and October 31 under my inspection. A careful post-mortem examination revealed nothing abnormal. Specimens of different organs from each were forwarded to the Biological Laboratory, Ottawa.

The pathologist's report confirms my opinion, that all were healthy.

In order to avoid the possibility of criticism or doubt on the part of any, the animals were slaughtered in the presence of experienced butchers, who agreed that all the organs were healthy, and the flesh of that good colour which characterizes healthy beef.

#### EXPERIMENT No. 2.

To decide whether the disease is due to the ingestion of 'ragwort,' if so, does good or poor feeding render more or less liable to disease.

The sixteen animals employed in this test were procured from well outside the disease area, and housed in a new isolated stable built for the purpose. They have never since been in contact with other animals, or exposed to outside contagion. It will be noticed that while all were fed on hay containing 'ragwort' every four received a different ration as follows :—

1—4, sufficient hay containing 'ragwort' four pounds grain mixture.

5—8, sufficient hay containing 'ragwort' two pounds grain mixture.

9—12, sufficient hay containing 'ragwort' without grain.

13—16, a restricted allowance of hay containing 'ragwort,' without grain.



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As this experiment is most important, I beg leave to give a separate record of each animal during the entire test. As this must of necessity be brief, I shall only mention conspicuous symptoms and post-mortem lesions.

*Animal No. 1.*

A steer two years old,\* native breed, average size.

This animal fed well, and appeared in good health until May 1, 1905, when premonitory symptoms of Pictou cattle disease were observed, and in the use of the term, I beg to say that our experiment goes to show that this disease is progressive and runs a much more chronic course than previously believed, and to the careful observer who takes pains to become familiar with the appearance and disposition of each animal under his care, certain premonitory symptoms may be observed in some instances months before the more characteristic symptoms are manifest.

In this case, as indeed in nearly all others, we noticed a peculiar bleached appearance of the hair, which seemed to have lost its lustre, a desire to be alone, irritation of temper or nervousness, occasional chills, although in a moderately warm stable. This animal would stand and shiver, while the healthy members of this herd appeared comfortable. The bowels are irregular, the pulse at this stage is fast although quite strong, temperature slightly above normal.

On May 16 the more characteristic symptoms set in, visible mucous membrane pale, eyes amaurotic, slight diarrhœa, emaciation.

June 3.—Symptoms much aggravated, very weak, staggering gait, pulse 81, temperature 100.

June 11.—Unable to rise. Died on June 14, 1905, being eighteen months and seven days from beginning of experiment, and forty-four days after first symptoms were noticed.

Post-mortem.—Noticed muscles pale, abdominal cavity contains about three gallons dropsical fluid, marked wasting of mesenteric and omental fat, which is saturated with fluid, rumen half full of food, mucous coat very dark, sub-mucous coat dropsical. The second and third stomachs are partly filled with food, the muscular coat of abomasum is thin and covered with blebs of serous fluid, mucous coat saturated with fluid and dotted here and there with ulcers, some ulcers are recent, some few are healed with scar tissue. The liver is normal in size, somewhat mottled. The capsule is very adherent and the pulp appears cirrhotic. The gall bladder is much enlarged, and walls thickened, all the other organs appear fairly normal. Pathological specimens were forwarded to the Biological Laboratory.

The pathologist's report confirms my diagnosis, and to avoid repetition, I may just say here that specimens of liver, kidney, spleen and lymph glands, and when necessary, stomach and other organs were forwarded for examination to the Biological Laboratory, and in each instance the pathologist found lesions of Pictou cattle disease, thus leaving no room for doubt as to the cause of death.

*Animal No. 2.*

Steer, two years old.—This animal appeared to be in good health, feeding well until February 7, 1905, when we find the following entry:—

Not doing well, variable appetite, rather unthrifty, the hair appears as though greased, and when rubbed the wrong way, shows much irritability of temper. If turned out he will stand and shiver. The temperature as is usual at this stage is slightly above normal.

April 1.—The animal exhibits severe nervous disturbance. When at large is almost constantly in motion. Temperature 103, pulse 80. For some days some improvement is shown, but on April 17th visible cerebral symptoms are exhibited, the animal running madly about, the eyes are exceedingly amaurotic, blood extravasations into the conjunctiva is noticed.

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\* The ages given are those of the animals at commencement of experiment.



April 23.—Appetite gone, much muscular inco-ordination.

April 25.—Animal is now lying down and seems indifferent to surroundings. Temperature has fallen to 99. Died on April 30, 1905, of Pictou cattle disease, being seventeen months and six days from beginning of experiment, and eighty-two days after first suspicious symptoms.

Post-mortem shows gross lesions, very similar to that of No. 1, but in this case the abdomen contains only a very small quantity of ascitic fluid, very little abdominal fat, layers of gelatinized fluid cover the visible viscera. Blebs of fluid standing out on omentum, the true stomach shows many ulcers, mostly old, the liver is slightly large and gray in appearance, spleen is normal in size, but darker than usual, heart and thoracic viscera are normal.

#### *Animal No. 3.*

A heifer rising two years old, average size.—This animal was a good feeder and quite thrifty, growing nicely until April 1, 1905, when she exhibited dullness, variable appetite, mucous membrane pale, slightly yellow, eyes prominent and bright, temperature slightly above normal, but rapidly falling when exposed to cold, pulse 50 and strong, little change noticed, except the progressive emaciation, which I may say is an almost constant feature of the disease, until May 13, when change for the worse takes place rapidly. Diarrhœa sets in, temperature falls to 99, pulse quick and weak, she gets up with difficulty, hind quarter seems paralysed.

May 18.—Body is covered with cold sweat, abdomen very pendulous, the sub-maxillary tissue is dropsical.

May 23.—There is twitching of muscles, an occasional tenesmus. Died of Pictou cattle disease May 30, 1905, being eighteen months and six days from beginning of experiment and sixty days after first indication of disease.

Post mortem.—The flesh is pale, and of slightly yellow colour. There is much ascites. The omentum is saturated with fluid. The coats of stomach are œdematous. considerable ulceration of true stomach, ulcers appear recent. In this case there is fluid under the mucosa of all the intestines, liver is somewhat small, substance shows fibrous bands, gall bladder very large, contains eighteen ounces dark green bile, kidneys are very pale, pericardial sack contains five ounces fluid.

#### *Animal No. 4.*

Heifer, one year old.—This was a very thrifty animal, and continued in apparently perfect health until June 19, 1905, when primary symptoms of cirrhosis set in. The more acute symptoms developed rapidly. By the 28th of June she had lost much flesh. Diarrhœa was not constant, appetite gone.

July 6.—Temperature slightly sub-normal, pulse very intermittent. The skin and visible mucous membranes are of a decidedly yellow tinge. The eyes though amaurotic were not so bright as noticed in some other cases. There was swelling of the lower eye-lids.

July 10.—Lying down, occasional tenesmus, temperature has fallen to 98.

July 15.—Died of Pictou cattle disease, being nineteen months and twenty-one days from beginning of experiment, and twenty-six days from beginning of sickness.

Post mortem examination reveals the usual gross lesions, ascites is very marked, and the mesenteric fat is decidedly yellow. The mucosa of abomasum hangs in loose folds, containing many ulcers. Many of these are pigmented. The mesenteric lymph glands are much enlarged and soft, the spleen pulp is very dark. the liver, though normal in size, is exceptionally tough and shows fibrous bands.

#### *Animal No. 5.*

Steer two years old, native breed, not a very good feeder, of a nervous temper and did not thrive as well as some of the others. He was apparently healthy until



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February 2, 1905, when he began to lose flesh and had the appearance of a poorly kept animal. Other suspicious symptoms developed and by the 22nd March we were able to diagnose the disease as cirrhosis. Except for progressive emaciation little change was noticed until April 25, when he became decidedly worse. The symptoms became more pronounced. On May 12 he developed violent cerebral symptoms, was almost constantly in motion, occasionally shaking his head. Sometimes he would stop to take a bite of grass, but appeared unable to swallow (probably due to spasm of œsophagus). The amaurotic condition of the eye was very pronounced. Extra flexion of the knee, which I may say is fairly constant symptom, was very noticeable, the feet being raised higher from the ground than usual. The action, however, is slow, and the animal seems to hesitate at every step.

On the 21st he seemed to have gained new strength. Cerebral symptoms were aggravated, the animal running madly about until completely exhausted. He died May 23, 1905, being seventeen months and twenty-nine days from beginning of experiment and seventy days from date of first reliable symptom.

Post mortem examination revealed the usual gross lesions. There was not, however, so much ascites, nor was the gall so large as noticed in other cases, but the liver pulp was very gray. There was also much ulceration of the mucosa of abomasum.

*Animal No. 6.*

Steer two years old, small. This animal appeared perfectly normal until July 9, 1905, when he exhibited first symptoms of cattle disease.

On August 1 the more acute symptoms developed. In this case which was the quiet or dull type, which I may say is the form usually met with in weak subjects, the animal would be found in a fence corner standing quiet or lying down, showing no inclination to join the herd, but rather a desire for concealment.

August 5.—Diarrhœa has set in and the temperature is sub-normal  $98\frac{1}{2}$ . The respiration is deep, twenty to a minute, pulse 81. The eye is not so bright as in other cases, and there is no hemorrhage into the conjunctiva. The lower eye-lids are much swollen and there is evidence of much ascites.

August 10.—Now lying down. The body is covered with cold sweat. Sticky saliva escapes from the mouth at intervals.

August 11.—Semi-comatose. Died August 12, 1905, being twenty months and nineteen days from the beginning of experiment, and thirty-four days from the date when first symptoms were observed.

Post-mortem examination shows the usual lesions. There was much ascites (fully six gallons). The abdominal fat was replaced with layers of jelly like lymph. The small intestines contained a considerable quantity of sand (this we have noticed in many cases). The stomach ulcers are much pigmented.

*Animal No. 7.*

Heifer one year old, average size. This animal showed no signs of illness until April 1, 1905, when we noticed the first symptoms of cattle disease. She, however, continued to feed well, and kept quite strong.

On June 5 the characteristic symptoms developed abruptly, which were similar to those exhibited by animal No. 5. She died June 15, 1905, being eighteen months and twenty-two days from beginning of experiment and seventy-six days from date of first symptom.

Post mortem examination showed a typical case of Picton cattle disease.

*Animal No 8.*

Steer, one year old, average size. This animal appeared to be healthy until July 15, 1904, when I noticed the following entry :—



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Not feeding well, losing flesh, and on August 8 slight diarrhoea and usual symptoms of Pictou cattle disease.

Sept. 1.—The acute symptoms (similar to No. 1) had developed. Died on September 7, 1904, being nine months and fourteen days from beginning of experiment and fifty-four days from beginning of sickness.

Post mortem examination showed a well developed case of Pictou cattle disease, the only peculiar feature being the presence of considerable abdominal fat. This, however, is soft and yellow. The liver was smaller than usual and apparently very cirrhotic.

*Animal No. 9.*

Steer one year old, small. This was a very good thrifty animal until May 30, 1905, when he presented the usual symptoms of cattle disease.

About June 20 he seemed to improve somewhat in appearance, but by July 21 he developed the characteristic symptoms already described. These were, however, of the quiet type and he lingered along failing every day. He died on August 21, 1905, being twenty months and twenty-eight days from beginning of experiment and eighty-two days from date of first symptom.

Post mortem examination showed the usual pathological changes resembling those noted in case No. 3.

*Animal No. 10.*

A heifer one year old. This animal was rather thin but appeared healthy until April 2, 1905, when first symptom was noticed. On April 12, diarrhoea and other acute symptoms set in (similar to case No. 6). Died June 2, 1905, being seventeen months and nine days from beginning of experiment and sixty-one days after first symptom of disease.

Post mortem examination showed the usual lesions.

*Animal No. 11.*

Steer one year old, average size. This was a thrifty animal until April, 1904, when the usual premonitory symptoms were noticed. On May 1 the more acute symptoms developed. This, however, was a very chronic case. He would for a few days appear much better, then a return of the symptoms, and he would lose more than he had gained. He continued in this way throughout June and July.

On August 1 the symptoms became more severe, the animal becoming very weak.

On August 26 the temperature had fallen to 97. Died on September last, 1904, being nine months and eight days from beginning of experiment and one hundred and twenty-three days from date of diagnosis.

Post mortem examination revealed the characteristic lesions of Pictou cattle disease, but no change was worthy of special notice, the liver to the naked eye showing much fibrosis.

*Animal No. 12.*

Steer one year old. This was a strong, healthy animal and a good feeder. He never gave evidence of sickness, and kept in fair flesh, however, he did not seem to grow as well as might be expected. He was killed on October 24, 1905, being twenty-four months from beginning of experiment. All the organs appear healthy to naked eye, except a few ulcers on mucous coat of abomasum. Dr. Higgins has found upon microscopic examination a slight deposit of connective tissue around the bile ducts with the usual pericellular extension, as well as other characteristic changes in the liver, and although this deposit was so slight that it would be impossible to detect its presence except under high power. Yet the result of this examination proves con-



## SESSIONAL PAPER No. 15a

clusively that this animal, also, was affected with Pictou cattle disease although not exhibiting any clinical symptoms.

This, I beg to say, is but another instance of the great assistance your inspectors derive from the Biological Laboratory under such capable management.

*Animal No. 13.*

Steer, one year old. The animal appeared in good health until about January 3, 1905, when he began to lose flesh. By February 1 the premonitory symptoms had developed, these becoming more pronounced until April 11 when the more acute symptoms were observed. Died on May 20, 1905, being seventeen months and twenty-six days from beginning of experiment and one hundred and twenty days from first symptom of disease.

Post mortem examination showed the usual gross lesions of Pictou cattle disease.

*Animal No. 14.*

Heifer one year old. Appeared in good health until about April 17, 1905, when first symptoms of cirrhosis were observed. The more characteristic symptoms developed about May 29. Appetite was very irregular, hind quarters became weak and paralyzed. On June 17 she became semi-comatose, pulse intermittent, temperature 99. Died on June 10, 1905, being eighteen months and twenty-six days from beginning of experiment and sixty-three days from date of first symptoms of disease.

Post mortem examination showed organs to be in much the same condition as that of No. 1.

*Animal No. 15.*

Heifer, one year old. This animal was very thrifty. Early in June she began to lose flesh, but fed well until June 17 when the acute symptoms (similar to No. 5) developed. Violent cerebral symptoms were noticed.

On June 16 she broke from the enclosure, becoming dangerous. Was shot on June 16, being nineteen months and twenty-two days from beginning of experiment and nine days after first symptom was noticed.

Post-mortem examination revealed the usual lesions. There was not much ascites, but the mucosa of the true stomach was much ulcerated and the liver very cirrhotic.

*Animal No. 16.*

Heifer one year old. This animal appeared perfectly normal until June 2, 1904, when we observed the first symptoms of the disease. The more acute symptoms developed abruptly. These did not vary much in character from those exhibited by No. 3. She died July 19, 1904, being seven months and twenty-six days from beginning of experiment and forty-seven days from date of first reliable symptom.

Post-mortem examination showed this to be a typical case of cattle disease. There was fully five gallons of ascitic fluid in the peritoneal cavity, while the stomach and liver gave the usual lesions.

## THIRD EXPERIMENT.

To ascertain if the feeding of 'ragwort' (which had been separated from the hay with which it was growing and thoroughly cured) would produce the disease.

This test was conducted in a new stable, the subjects being two two year old steers, quite healthy, about same size and weight. Animal No. 17 steer two years old was fed twice daily on chopped 'ragwort' with a little bran, while animal No. 18 was fed twice daily on chopped oats straw with very little bran. Although somewhat thin No. 17 was



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bright and apparently healthy until July 14, 1904, when symptoms of cattle disease developed abruptly, characterized by severe nervous disturbance and loss of power of the limbs, palpitation, rapid action of the heart, sub-normal temperature and extreme emaciation. Died on July 22, 1904, being seven months and twenty-eight days from beginning of experiment and eight days from date of first definite symptom.

Post-mortem examination revealed a well developed case of Pictou cattle disease.

#### *Animal No. 18.*

Steer two years old. This animal continued in good health during the entire test and was slaughtered for beef on October 24, 1905, being twenty-three months from beginning of test. All the organs were upon careful examination found to be perfectly normal. This was verified by the pathologist after examining the specimens forwarded him.

#### FOURTH EXPERIMENT.

To ascertain if 'ragwort' if cut before flowering would produce the disease. A quantity of 'ragwort' was cut before flowering and mixed with twenty times its bulk of clean hay.

A calf six months old (No. 19) was fed twice daily upon this mixture, also receiving two pounds crushed oats. The feeding began on December 1, 1904. The animal did not grow well but appeared fairly healthy until May 1, 1905, when diarrhœa set in. He now failed rapidly exhibiting symptoms of nervous disturbance, followed by notable dejection. He died on May 26, 1905, being five months and twenty-six days from beginning of experiment and twenty-six days from date of first symptom.

Post-mortem changes did not vary much in character from those already described.

#### CONTACT EXPERIMENT.

Two healthy young animals (G and N) were on April 7, 1904, placed in an isolated stable and tied in the same stable with an animal suffering from cattle disease. All were fed on imported hay out of the same manger and watered from the one pail.

During the summer the contact animals were kept in an inclosure with the animals affected with the disease. No precaution was taken in any way to guard against infection.

The contact animals remained perfectly healthy during the entire test and were slaughtered for beef on October 23, 1905.

Post-mortem examination showed the organs normal as was verified by the pathologist.

Even more striking proof of the non-contagion of the disease will be found in the case of animal No. 18 (experiment No. 3).

This steer was stabled during two winters and pastured during two summers with the 'ragwort' fed cattle. Sixteen of these animals lived and died at his side. He fed over the ground on which they had fallen, was often noticed licking the sick ones when they were unable to rise. He was kept in an exactly similar way to the others except that 'ragwort' was withheld. (See experiment No. 3.)

#### INOCULATION EXPERIMENT.

The blood and ascitic fluid used in this test was obtained from experiment heifer No. 4. In his report upon the specimens from this case, your pathologist states that the cirrhotic condition of the liver was more extensive than in any of the experimental cases that he had examined, thus leaving no room for doubt as to the reliability of the material employed.



## SESSIONAL PAPER No. 15a

*Subcutaneous inoculation—*

- Cow (B)—Fifteen cubic centimetres of fresh blood.
- Steer (J)—Thirty cubic centimetres of fresh blood.
- Steer (K)—Fifteen cubic centimetres of ascitic fluid.
- Heifer (L)—Thirty cubic centimetres of ascitic fluid.

*Intravenous inoculation—*

- Heifer (M)—Fifteen cubic centimetres of fresh blood.
- Heifer (O)—Thirty cubic centimetres of fresh blood.

*Intraperitoneal inoculation—*

- Steer (D)—Fifteen cubic centimetres of fresh blood.
- Steer (A)—Thirty cubic centimetres of fresh blood.
- Steer (H)—Fifteen cubic centimetres of ascitic fluid.
- Heifer (P)—Thirty cubic centimetres of ascitic fluid.

These animals were inoculated on July 15, 1905, there was no swelling at point of inoculation or any ill effects of any nature. Temperature and pulse remained normal throughout. The animals were slaughtered between October 10 and October 31, 1905, Post-mortem examination gave no lesions of any description.

A similar test in which guinea pigs were employed gave negative results.

I beg to submit that the above experiments prove clearly that Pictou cattle disease is not contagious either by means of stable, pasture, contagion or inoculation, but is caused solely by the ingestion of 'ragwort' or by some deleterious substance which it imparts to the hay.

## TREATMENT.

As to treatment, I have very little to say. My observations during the past year confirm the opinion that the strychnine and iron treatment (outlined in my last season's report) will in many cases prolong the life, and in incipient cases may enable the owner to get the animal into marketable condition, but medicine cannot repair the morbid changes in the liver, and it is very doubtful if much practical benefit can be derived therefrom.

## PREVENTION.

Eradication of 'ragwort' is the first essential. I believe, sir, that you are of the opinion that sheep and perhaps goats will prove a most valuable aid in the fight that should at once be made against this plant. I heartily concur in your opinion, and firmly believe that if sheep were confined in sufficient number upon weedy farms and concerted action taken to cut the weed wherever found, in a few years the land will be free from 'ragwort' and consequently from cattle disease.

The following experiment helps to confirm this opinion. Four sheep were confined since April 1, 1905, on four acres of very weedy pasture. The field (as will be seen from the photograph which I have the honour of sending you) is entirely free from 'ragwort' while it is bounded on all sides by a luxuriant growth of the plant. More extensive experimentation, however, along this line is necessary before sufficiently reliable information is gained.

While it is generally admitted that sheep will destroy 'ragwort' the opinion prevails that the plant has an injurious effect upon the sheep, first by causing sickness and death, secondly by staining the tissues and rendering the flesh unmarketable.

All these are points of vital interest to the farmer and stock-owner, and I am glad to learn that you have under consideration a series of experiments which I believe will be of most practical value.

In conclusion, I am glad to be able to say that no contagious disease has visited this county during the year, although I have investigated the usual number of re-



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ported outbreaks. I have, however, caused to be slaughtered sixty head of cattle, these being infected with Pictou cattle disease. Detailed accounts of each case have been forwarded to you.

I have the honour to be, sir,  
Your obedient servant,

The Veterinary Director General,  
Ottawa.

W. H. PETHICK,  
*Inspector.*

F. S. MACDONALD, V.S.

SOURIS, P.E.I., October 31, 1905.

SIR,—I have the honour to submit herewith a statement showing the number of cattle slaughtered for Pictou cattle disease and the amount of compensation paid therefor, during the twelve months ending October 31, 1905.

In compliance with your instructions, I have investigated the reported existence of glanders at Big Pond and East Baltic. Mallein test chart and a report on the subject have been forwarded to you.

1904.	Number slaughtered.	Amount paid.
November.. . . .	. . . . .	....
December.. . . .	. . . . .	....
1905.		
January.. . . .	. . . . .	....
February.. . . .	. . . . .	....
March.. . . .	. . . . .	....
April.. . . .	1	\$ 20
May.. . . .	3	56
June.. . . .	9	112
July.. . . .	8	138
August.. . . .	5	82
September.. . . .	1	20
October.. . . .	3	50
	—	—
Total.. . . .	30	\$478

I have the honour to be, sir,  
Your obedient servant,

The Veterinary Director General,  
Ottawa.

F. S. MACDONALD,  
*Inspector.*

G. TOWNSEND, D.V.S.

NEW GLASGOW, N.S., October 31, 1905.

SIR,—I beg to submit my report of work done for the Department of Agriculture for year 1904-5.

The only work I have been called on to do has been Quarantine Inspection of Pictou cattle disease in Pictou county.



## SESSIONAL PAPER No. 15a

There have been from November 1, 1904 to October 31, 1905, forty cases, a decrease from last year of forty-one in the county.

I think the following will explain to some extent the great falling off in the number of diseased animals.

The conditions in the province for the past year and a half have been exceptional, and the circumstances were such that practically placed the whole county in a feeding experiment.

First.—In 1904 there was a very great shortage in feeding stuff, hay, straw, &c.

Second.—On account of this, farmers rapidly disposed of a large number of their cattle naturally retaining when possible the strongest and most thrifty to carry through the winter, and would also lessen the number of head in the districts.

Third.—Large quantities of hay was imported from Quebec, which I have no doubt (in most cases) was better and more nutritious than that raised on the home farm where disease is found.

Fourth.—There would certainly be no Senecio Jacobea or Stinking Willie which I believe is an exciting, or predisposing cause, if not the direct one of the disease.

## TUBERCULOSIS.

I have met a few cases that have been suspected as Pictou county disease. In all cases where I thought advisable to have animals destroyed the owner has done so cheerfully although with no indemnity in sight.

## ANTHRAX.

This has been the one little spot in the nature of work performed by me this year that has been out of the ordinary.

Mr. John McLean, of Greenwood, Pictou county, came to me to see a two-year old bull that had died an hour previous, and said that he had lost a cow a week before under similar circumstances, and suspected Pictou county disease.

The bull had been stabled the night before apparently healthy, in the morning was dead, lying on his sternum quite natural, as if there had been no death struggle. There was a bloody, frothy discharge from nostrils. On opening up abdomen large quantities of serum escaped also tinged with blood, spleen very much enlarged and full of dark clotted blood, in fact there were hemorrhages in nearly all the organs. The cow had been lost a day, and when found was lying down on sternum. No marks of struggling were present, with the same bloody frothy discharge from nostrils. Those were the first two animals that have died on the farm for thirty years from any cause. Never had black leg.

I had animal burned and buried and stable, &c., cleansed and disinfected with carbolic solution and whitewash.

I have the honour to be, sir,

Your obedient servant,

GEORGE TOWNSEND,

*Inspector.*

The Veterinary Director General,  
Ottawa.



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E. C. THURSTON, D.V.S.

SYDNEY, C.B., October 31, 1905.

SIR,—I beg the honour to report that since my appointment of inspector here last June, no live stock has been imported through this port, nor has there been any outbreak of contagious disease in the district.

I have the honour to be, sir,  
Your obedient servant,

The Veterinary Director General,  
Ottawa.

E. C. THURSTON,  
*Inspector.*

V. T. DAUBIGNY, M.V.

TERREBONNE, QUE., October 31, 1905.

MONSIEUR,—Pendant l'année expirant le 31 octobre 1905, je n'ai fait aucune inspection. Sauf une, cependant, à Montréal, pour un cas de glanders supposé.

J'ai visité à plusieurs reprises, la partie est de Montréal et n'ai découvert rien relativement aux maladies contagieuses.

En dehors de cela, j'ai donné des conférences dans diverses localités sur les glanders, gale, charbon, etc., etc.

Cet été il ya eu des cas de charbon dans quelques endroits du nord de la province de Québec.

Quant aux conférences, elles plaisent aux cultivateurs, qui comprennent bien ce qu'ils doivent faire en de pareils cas et après l'explication de la loi sur les maladies contagieuses on ne m'a pas fait de remarques d'hostilité, ce qui est de bon augure.

J'ai bien l'honneur d'être,  
Monsieur le directeur,  
Votre très dévoué serviteur,

Directeur Vétérinaire Général,  
Ottawa.

V. T. DAUBIGNY,  
*Inspecteur.*

J. D. WHYTE, D.V.S.

SHERBROOKE, Que., October 31, 1905.

SIR,—I have the honour to submit to you this my annual report for the year ending October 31, 1905.

## GLANDERS.

Total number of horses tested during the year, 101, of which 1 was tested twice, 2 were tested three times, they becoming ceased reactors, the two previous tests being made in the year 1904. Total number destroyed, 47.

## MANGE.

Acting on instructions, I visited Chicoutimi, Que., to investigate the nature of an outbreak of a skin disease affecting horses in that district, which proved to be



## SESSIONAL PAPER No. 15a

mange, which was quite prevalent in that locality, Dr. T. R. Duchene, of Chicoutimi, being appointed to take charge of this outbreak.

I also had three other cases, two at St. Ours, Que., and one at St. Denis, Que., one of the cases at St. Ours still being in quarantine.

## SUSPECTED ANTHRAX.

I visited the parish of Yamaska, Que., August 31 to investigate a supposed outbreak of anthrax, fifteen cows having died suddenly in that locality, all carcasses having been disposed of, and the symptoms described by the people were such that a satisfactory diagnosis could not be arrived at; advised cleansing and disinfection.

I also visited La Baie du Fevre, Que., September 4, to investigate a supposed outbreak of anthrax, fifteen animals having died suddenly. As there were not any animals sick during my visit, and those that had died were deeply buried, I could not fully determine the nature of the disease. I requested Dr. Lahaye, of Nicolet, if any more died to forward specimens of the blood to the biological laboratory, Ottawa, which he did, and the result of the investigation was negative as to anthrax. I advised cleansing and disinfection, and either burning the bodies or burying them in lime.

## TETANUS.

Acting on instructions, I visited the premises of Luther Fuller, of Bolton township, Quebec, who had two cows die in what appeared to him to be a peculiar manner, but upon investigation the symptoms presented were those of tetanus. Had the premises cleansed and disinfected.

## SUSPECTED HÆMORRHAGIC SEPTICÆMIA.

I visited South Durham, Que., to investigate a supposed outbreak of hæmorrhagic septicæmia, three cows having died suddenly in a pasture in which for the three preceding years animals have died in somewhat the same manner, at a post mortem the lesions found not being characteristic, I forwarded specimens to the biological laboratory, Ottawa, the results of which were negative.

## TUBERCULOSIS.

I have tested, assisted by Dr. Etienne, one lot of 93 head of cattle for South Africa, of which 3 reacted.

Have tested 9 head of pure-bred cattle for export to the United States, 5 head reacting.

Also have tested 4 head pure-bred cattle imported from the United States, not any reacting.

Cattle tested not for export, 103 head, 23 head reacting, all reacting cattle being ear-marked.

Making a total of 209 head tested.

The following is the number of animals imported from the United States at this port:—

Cattle.. . . .	24
Sheep.. . . .	1
Goats.. . . .	4
Swine (for breeding purposes)....	5
“ (for immediate slaughter)....	174

I have the honour to be, sir,

Your obedient servant,

The Veterinary Director General,  
Ottawa.

J. D. WHYTE,  
*Inspector.*



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A. A. ETIENNE, M.V.

October 31, 1905.

SIR,—I have the honour to submit my report from December 1, 1904, to October 31, 1905.

During that time I have inspected 48 premises and tested with mallein 78 horses, out of this number 50 responded to the test and were destroyed, 24 giving clinical symptoms and the remaining 26 did not. The owners of 39 of these horses have received compensation. Out of the 78 tested with mallein 20 horses did not react, 6 horses have ceased to react, 23 horses were tested the second time, and 11 were tested the third time.

On July 12 I was requested to visit St. Canute and examine several horses in that town, and in Ste. Agathe des Monts that were reported as having mange.

I found four horses owned by one man in St. Canute and one in Ste. Agathe that had mange. They were quarantined, treated and cured.

On the 7th of September I received orders to visit St. Jerome and make an investigation on seven farms where several cows had died, showing symptoms of anthrax; no action was taken, not being able to make closer examinations, for the animals had been buried for several days. One person in St. Agathe was prosecuted and fined for disposing of a quarantined horse.

I went to Shawinigan Falls and inspected premises where verminous bronchitis in hogs had existed for some time, which caused the deaths of over one hundred hogs.

October 27 I went to St. Thomas de Pierreville and La Baie du Fèvre and made a thorough investigation as to the existence of sheep scab. I am pleased to report that this disease has been eradicated several years ago when all the sheep were dipped.

While in La Baie du Febvre I was called to make a post mortem examination on a heifer that died of a very peculiar disease, on this farm 7 cows, 2 horses and 4 hogs having died, all giving the same symptoms.

I have the honour to be, sir,  
Your obedient servant,

A. A. ETIENNE,  
*Inspector.*

The Veterinary Director General,  
Ottawa.

THOS R. DUCHENE, V.S.

CHICOUTIMI, QUE., October 31, 1905.

SIR,—I have the honour to submit to you my report for the year ending October 31, 1905, having started to work on the 15th of May last.

#### MANGE.

An outbreak of mange in horses in the county of Chicoutimi and Lake St. John came under my supervision, in which eighty-two farms were inspected, one hundred and forty-two horses were involved and placed under quarantine, of which there is only eleven to be relieved now and all recovered after proper treatment. The disease seems to be under control down here in Chicoutimi, but not in the Lake St. John district.

#### GLANDERS.

During the year I have tested in the county of Chicoutimi twenty horses with mallein, seven of which reacted and were destroyed and buried.



## SESSIONAL PAPER No. 15a

In October last, I went down in the county of Saguenay upon special instructions, and there I have tested with mallein sixteen horses, five of which reacted and were by me marked E.R., five others were killed upon clinical symptoms.

In the Chicoutimi county I found that the most of the outbreaks can be traced to horses traded in the county of Saguenay and brought here by shantymen.

I have the honour to be, sir,  
Your obedient servant,

The Veterinary Director General,  
Ottawa.

THOS. R. DUCHENE,  
*Inspector.*

J. D. DUCHENE, D.V.S.

QUEBEC, October 31, 1905.

SIR,—I have the honour to submit to you my report for the year ending October 31st, 1905.

## GLANDERS.

During the year, I have tested 245 horses with mallein, 153 of which have reacted, 115 have been destroyed, 35 are quarantined under form No. 48, and 3 ceased reacting. Out of these which ceased reacting, 2 ceased at the third injection and the other at the sixth injection.

In my inspections throughout the province of Quebec, east of Montreal, I found some isolated cases of glanders, but on the north shore of the St. Lawrence river, I have inspected with Doctor A. E. Moore, an outbreak of glanders existing east of the Saguenay river from River Ste. Marguerite to River Portneuf, on a distance of about 85 miles.

This outbreak of glanders is said to have originated some 4 years ago when gypsies traded some infected horse with a farmer of the district.

Since that date infected horses belonging to farmers or to lumber companies specially in lumber camps have been in direct contact with sound ones and no one seemed to know the gravity of this malignant disease, and took no precautions whatever.

## MANGE IN HORSES.

During the year an outbreak of mange in horses has been spread in the counties of Beauce and Dorchester. I have visited 38 farms and quarantined 49 horses which have been treated, of which 44 are cured and 5 under treatment.

## SHEEP SCAB.

I have visited 28 farms at La Baie du Febvre, and examined 145 sheep. 65 were found to be affected and were treated by the dipping process and cured.

No case of hog cholera has been reported to me during the past year.

I have the honour to be, sir,  
Your obedient servant,

JOHN D. DUCHENE,  
*Inspector.*

The Veterinary Director General,  
Ottawa.



J. O. GUY, D.V.S.

St. Johns, Que., October 31, 1905.

SIR,—I have the honour to submit to you my brief report from May 1 to October 31, 1905.

For import—	
Cattle (Holsteins) .. .. .	2
For export—	
Cattle... .. .	2
Sheep... .. .	6

N.B.—Inspected at port St. Johns for export to the United States for exhibition purposes:—

Cattle (Short-horns) .. .. .	13
Sheep... .. .	21

All animals inspected at the port of entry have been free from disease.

I have notified the Department of Agriculture of the outbreak of a few cases of glanders which have occurred: at Napierville, 5; St. Alexandre, 1; Stanbridge Station, 1. These have been attended to by the inspector, Dr. Etienne, and reported to the department.

The infection of glanders was brought from the United States by the exchange of horses between gypsies and our farmers.

I have the satisfaction to state that there are no other signs of epizootic or enzootic diseases in my district to my knowledge.

I have the honour to be, sir,  
Your obedient servant,

The Veterinary Director General,  
Ottawa.

J. O. GUY,  
*Inspector.*

A. McCORMICK, V.S.

ORMSTOWN, Que., October 31, 1905.

SIR,—I have the honour to submit to you the following report of work done for the year ending October 31, 1905:—

I gave health certificates for the following animals from this district for exportation into the United States:

November 22, 1904—One registered lamb.

September 11, 1905—Thirty-seven head of cattle for exhibition purposes.

October 2, 1905—One registered lamb.

October 2, 1905—Ten head of cattle, grazers.

October 16, 1905—Twenty head of cattle, grazers.

October 17, 1905—Two registered Ayrshire calves.

I am glad to report that there has been no outbreak of any contagious disease, and that the health of animals in this district has generally been good.

I have the honour to be, sir,  
Your obedient servant,

The Veterinary Director General,  
Ottawa.

ARCH. McCORMICK,  
*Inspector.*



SESSIONAL PAPER No. 15a

A. SMITH, F.R.C.V.S.

TORONTO, October 31, 1905.

SIR,—I have the honour to submit the following brief report on the health of the domestic animals in the Province of Ontario, during the past year.

## HORSES.

Have been generally healthy. A few cases of glanders have been discovered and reported to your department and promptly stamped out by the inspectors.

## CATTLE.

Have been quite healthy. Tuberculosis no doubt exists to a slight extent, but certainly not to the extent it does in Great Britain.

## SHEEP.

Have also been healthy, with exception of a few cases of scab, which has been quickly dealt with.

## SWINE.

Hog cholera and swine plague exists to a very limited extent owing to the efficient measures taken by the various inspectors.

I have the honour to be, sir,  
Your obedient servant,

The Veterinary Director General,  
Ottawa.

ANDREW SMITH.

WM. STUBBS, V.S.

CALEDON, October 31, 1905.

SIR,—I have the honour to submit to you my annual report for the year ending October 31, 1905.

During the year I have tested with tuberculin one hundred and forty-seven head of pure bred cattle for export to the United States, twelve of which reacted.

I have tested for glanders with mallein nineteen horses owned by six different owners, eight of which reacted to the test and were destroyed. All the buildings and premises which I had placed under quarantine are now released.

June 27 I visited Southampton, Bruce County, where it was reported that a number of cattle died suddenly under peculiar circumstances. After careful examination I found the disease to be of a non-contagious character, and due to improper care and feeding.

August 30, I assisted Dr. A. E. Moore to examine all the show sheep at Toronto Exhibition and found them free from scab and all other diseases.

During the year, in the absence of Dr. Stork from the Toronto market, I invariably visited that market, also the Union Stock market at Toronto Junction and found the stock remarkably free from disease. During my presence at the markets I looked after the cleaning and disinfecting of cars that came listed from quarantined districts.

I have the honour to be, sir,  
Your obedient servant,

The Veterinary Director General,  
Ottawa.

WILLIAM STUBBS,  
*Inspector.*



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J. H. TENNENT, V.S.

LONDON, October 31, 1905.

SIR,—I have the honour to submit to you this, my annual report for the year ending October 31, 1905.

TUBERCULOSIS.

During the year I have tested with tuberculin 61 head of pure bred cattle for export.

For shipment to United States.. . . . .	52
For shipment to Japan.. . . . .	9

Five of the above animals were found to be diseased, and were duly reported and ear-marked.

SHEEP SCAB.

Number of farms quarantined.. . . . .	71
Number of flocks affected with sheep scab.. . . . .	41
Number of flocks in contact with diseased sheep.. . . . .	30

The sheep on the above quarantined farms have been twice dipped in lime and sulphur dip.

I superintended the first and second dipping of the sheep on 29 farms and have since inspected them, all of which appeared to be free from sheep scab.

It was reported to the department that sheep shipped from Owen Sound, and Chatsworth, to Toronto market, also from Oil Springs, and Brigden to Buffalo, were affected with sheep scab.

Acting on instructions I visited, and inspected the sheep on 24 farms in the neighbourhood of Owen Sound, 30 farms in the neighbourhood of Chatsworth and 99 farms in neighbourhood of Oil Springs and Brigden, and found no sheep in the above districts affected with sheep scab.

GLANDERS.

During the year I have made 37 tests with mallein.

Number of horses tested 1st time.. . . . .	21
“ “ 2nd “ . . . . .	16

Five of the above horses reacted to the first test and also showed clinical symptoms of glanders and were destroyed; the remaining 16 horses which had been in contact with the diseased five horses did not react to the second test, nor show clinical symptoms of glanders and were released.

Acting under instructions I visited and examined the horses that had been exposed to glanders on 33 farms, none of which showed clinical symptoms of the disease, consequently I did not submit them to the mallein test.

RABIES.

One dog showing symptoms of rabies was taken to the Pasteur Institute, New York, for examination, and was pronounced to be suffering from rabies.

Nineteen dogs were quarantined, 12 of which were suspected of having been in contact with the rabid dog; the remaining 7 had bitten persons and were quarantined on suspicion. After being kept in quarantine the required time, and rabies not developing among them, all were released.



## SESSIONAL PAPER No. 15a

## CLEANING AND DISINFECTING CARS.

I superintended the cleaning and disinfecting of 77 cars which carried live hogs from the quarantined district.

I have the honour to be, sir,

Your obedient servant,

The Veterinary Director General,  
Ottawa.

J. H. TENNENT,  
*Inspector.*

W. W. STORK, V.S.

TORONTO, October 31, 1905.

SIR,—I have the honour to submit my annual report as inspector stationed at Toronto. During the year just past my time has been occupied inspecting stock at the different markets in and around Toronto, supervising the cleansing and disinfecting of cars at different points, and investigating reported outbreaks of contagious disease in various parts of Ontario.

I have made periodical visits to the camps of the different railway construction companies where large numbers of mules and horses are employed in railway work, have been present at all large horse sales in Toronto and have inspected the horses and mules belonging to the different travelling circuses which, during the summer months, visited Toronto.

In the month of May, in company with Dr. James, of Ottawa, I tested a consignment of dairy cattle for export to South Africa. Also tested, within the last year, fifty-two pure bred cattle for export to the United States.

The following is a synopsis of the various investigations and outbreaks of contagious disease dealt with by me during the period covered by this report :

## ANTHRAX.

During the month of August an outbreak of anthrax occurred in the vicinity of Collingwood, Ont., where on one farm within a few days three cows, two pigs and one sheep died, showing symptoms strongly indicative of this disease.

The owner of these animals, while removing the hide from the first animal to succumb, unfortunately became inoculated and died in a short time.

Prompt measures in the way of quarantining and disinfecting were immediately enforced with the result that the disease was checked without further fatalities.

## GLANDERS.

During the year I have made twenty-two investigations where suspected glanders has been reported, testing with mallein in all forty-seven horses, twenty-two of which I had destroyed as being diseased.

The localities in which the disease appeared, the number tested and the number destroyed in each locality is as follows :—

	Tested.	Destroyed.
County of Addington.. . . . .	1	1
“ Grey.. . . . .	5	4
“ Hastings.. . . . .	8	4
“ Huron.. . . . .	14	5
“ Lennox.. . . . .	4	2
“ Oxford.. . . . .	2	1
“ Waterloo.. . . . .	1	1
“ Wellington.. . . . .	9	2
“ York (Toronto).. . . . .	3	2



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Wherever the presence of the disease was established strict enforcement of regulation regarding quarantine and disinfection of premises was carried out, and wherever it could be established that a diseased animal had lately changed ownership, the premises formerly occupied by the diseased animal were visited, quarantined and disinfected, and all horses that I could trace as having been in direct contact with the diseased animal were submitted to the mallein test.

#### SUSPECTED RABIES.

During the latter part of June I visited the city of London, Ontario, and in company with Dr. Tennent, of that city, spent some ten days in closely watching developments in what was currently reported to be a case of rabies.

The facts were that a child was bitten by a pet dog that had been observed acting strangely.

The child's father, who is a medical practitioner, residing in London, immediately took both child and dog to a New York institute and shortly after their arrival there a report was wired to the London Board of Health that the dog died of 'paralytic rabies.' Close inspection of all dogs in immediate vicinity of where the suspected animal had been at large failed to reveal anything abnormal in any of the canines, and although a close watch was maintained for some time, the reported case was the only one observed.

#### HOG CHOLERA.

During the past year there has been a marked falling off of reported cases of hog cholera, due no doubt to the rigid enforcement of regulations regarding shipment from suspected areas. Any investigations I have made of reported sickness in hogs have turned out to be minor ailments due either to injudicious feeding or unsanitary surroundings.

#### SHEEP SCAB.

During the year two separate consignments of sheep appeared in Toronto market showing the disease. These animals were promptly quarantined and slaughtered under inspection. The pens occupied by them and the cars in which they arrived were held in quarantine and disinfected and all precaution taken against further spreading of the trouble.

I visited several quarantined farms during the summer and supervised the dipping of sheep, using the lime and sulphur dip as prescribed by the department.

#### MANGE.

One case of mange in a horse appeared in Toronto, the animal was isolated and successfully treated.

I have also visited Parry Sound district where disease in cattle was reported and found upon investigation the trouble was confined to a few calves that died of black quarter. There being no veterinarian practising in the locality, I had the owner procure from the department some blacklegine, the remaining calves were vaccinated and the trouble disappeared.

During my absence from Toronto on various investigations, Dr. Orchard, of Windsor, or Dr. Stubbs, of Caledon, have attended inspection duties at the different markets and I might say in this connection that within the past year the duties of inspection of these markets has become systematized, especially the supervising of disinfection of stock cars, and should by any chance, as occasionally happens, a car



## SESSIONAL PAPER No. 15a

be removed without being attended to, no pains are spared in having this car located, brought back and cleaned to the satisfaction of the acting inspector.

I have the honour to be, sir,

Your obedient servant,

W. W. STORK,  
*Inspector.*

The Veterinary Director General.  
Ottawa.

M. B. PERDUE, V.S.

CHATHAM, ONT., October 31, 1905.

SIR,—I have the honour to submit my annual report for the year ending October 31, 1905.

## HOG CHOLERA.

During the year there have been forty-five outbreaks of hog cholera, involving the slaughter of 1,032 hogs, which have been dealt with by myself and Drs. Orchard and Philips.

With one or two exceptions the outbreaks this year all occurred in the counties of Essex and Kent. One exception which should, perhaps, be noted, occurred at Grimsby, in Lincoln county. The Grand Trunk railroad tracks cross this farm and the only way of accounting for the appearance of the disease in that locality is that it may have been carried by shipments of foreign hogs passed through Canada and spread by droppings from the cars. This line of railroad is a direct line from Detroit to Buffalo.

The forty-five outbreaks of hog cholera during the past year is considerably less than one half the number during the previous year when there were 105 outbreaks and the number of hogs slaughtered this year, 1,032, is only a little more than one-third the number slaughtered last year, when 3,011 hogs were killed. During the year ending October 31, 1903, there were 207 outbreaks and 6,543 hogs killed. This is more than four times the number of outbreaks this year and more than six times as many hogs slaughtered. I submit that this shows a decided improvement in the situation as regards hog cholera and demonstrates, beyond question, the efficacy of the measures adopted by the department for the stamping out of the disease. When outbreaks have made necessary the quarantining of individual farms, I have this year generally found a prompt and cheerful compliance with the regulations in regard to cleansing and disinfecting, and there have rarely been second outbreaks where hogs were again kept after the raising of the quarantine. This is one of the most important and encouraging features of the improved conditions throughout the district. It is this co-operation of the farmers that makes the work of the inspectors effective.

At the beginning of the fiscal year, certain townships in Essex and Kent counties and the Island of Walpole in Lambton county were under quarantine. As conditions improved throughout this district there were many complaints that this worked an unnecessary hardship on both farmers and shippers and on May 15 last, the quarantine was raised and new regulations substituted, providing for the inspection of all shipments of hogs from the entire district in which hog cholera had existed. Under these new regulations, there have been shipped from this district 671 cars, containing 67,950 hogs, all of which have been carefully inspected before entering the cars. In all cases duplicate certificates of health are sent to inspectors at the point



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of destination, where the cleansing and disinfection of the cars are superintended and certified to by them.

There are more than forty shipping points in the district and as all shipments must be reported forty-eight hours before being made, it will be apparent that not only do the actual inspections require considerable time, but also that it involves considerable time at headquarters receiving report from the different shippers and providing that the inspections be made without delay.

During the year I have made several trips of general inspection throughout the district, and am pleased to report that no case of attempted concealment of disease has come under my notice. Heretofore there has always been more or less concealment of the disease, but this year practically every case has been reported directly from the farmer. I have also visited a number of the fall fairs in the counties of Essex and Kent, where I have had an opportunity to meet and converse with the farmers and to see the different classes of stock.

#### GLANDERS.

In the vicinity of Amherstburg in Essex county, I tested two horses with mallein and found a reaction. They were afterwards again tested by Dr. Moore, who also found a reaction and had the animals destroyed.

#### SHEEP SCAB.

During an investigation in the vicinity of Watford and Inwood, in company with Doctors Moore and Tennent, four outbreaks of sheep scab and one suspect came under my notice during the year. These cases were afterwards dealt with by Dr. Tennent.

#### TUBERCULAR TEST.

During the year I tested two head of cattle for export, neither of which showed a reaction.

I have the honour to be, sir,  
Your obedient servant,

M. B. PERDUE,  
*Inspector.*

The Veterinary Director General,  
Ottawa.

G. W. HIGGINSON, V.S.

ROCKLAND, October 31, 1905.

SIR,—I have the honour to submit to you my report ending the year October 31, 1905.

#### TUBERCULOSIS.

During the year I have submitted to the tuberculin test, 390 head of cattle, 146 of which were for export, 14 of which reacted, 244 others were private tested, 16 of which reacted.



## SESSIONAL PAPER No. 15a

## GLANDERS.

During the year I have tested 158 horses with mallein, 37 of which reacted and were destroyed. Eight of these I tested three times and got a reaction at every test, three I tested twice and got a reaction in each case. Eight I destroyed on clinical symptoms.

## MANGE.

An outbreak of mange in horses in the county of Labelle, eighteen horses were placed in quarantine and proper treatment recommended. An outbreak also occurred in the county of Glengarry in the vicinity of Glen Robertson and Alexandria where nine farms were placed under quarantine, thirteen horses in all. All of which with the exception of two made a speedy recovery. Also had four horses under quarantine in the county of Prescott for mange.

## ANTHRAX.

From your instructions I visited Oka on the River Ottawa to investigate into an outbreak of disease among cattle that were grazing on a commons just outside of the village, some twenty-one having died previous to my visit. In a great many instances there had been just a little earth thrown over the carcass, no precaution being taken to prevent the spread of the disease. I had all the carcasses exhumed and properly destroyed by burning them and had the grass around where they were previously buried covered by slack lime and recommended that the rest of the cattle grazing on the said commons be vaccinated. One man who had owned one of the cows that had died became inoculated by some means and died within a week's time, and the doctors diagnosed his case as anthrax.

I have the honour to be, sir,  
Your obedient servant,

G. W. HIGGINSON,  
*Inspector.*

G. W. ORCHARD, V.S.

WINDSOR, October 31, 1905.

SIR,—I beg leave to submit below my report for the year ending October 31, 1905.

My work was confined to the counties of Essex and Kent, during the months of November and December, 1904, and January, 1905, and during that time I inspected thirty-eight cars containing 3,614 live hogs, consigned from the guaranteed area, to various packing houses for immediate slaughter. I dealt with twenty-two cases of hog cholera involving the slaughter of 539 diseased and contact hogs, for which \$2,071.96 was allowed as compensation to the owners.

During the above-mentioned period, I visited Amherstburg and inspected 240 sheep brought by Walter Pabst, a settler from Montana, and found them all healthy.

I also visited several farms under quarantine and on those that had been thoroughly cleansed and disinfected I recommended their release from quarantine. During the year I tested with mallein five horses, two reacted and were destroyed; compensation allowed, \$123.33.

On February 8th, I went to Toronto and relieved W. W. Stork, V.S., inspector of stock at the markets, and examined during February, 2,212 sheep and lambs. Although



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scab in sheep, was somewhat prevalent in different sections of Ontario, I only found one shipment affected with scab while I was there, this lot was immediately quarantined and the next day slaughtered, and the pens in which they were placed thoroughly disinfected.

After Dr. Stork's return to his work at Toronto, I visited the Niagara frontier, and endeavoured to better conditions at Fort Erie and Bridgeburg, at which point a great deal of stock from Ontario as well as stock in transit from the United States enters Buffalo for market or feeding. The months of April, May and June and some of July was spent by me principally at Buffalo, with trips along the frontier during the spare days keeping a close watch on the transit trade going through Ontario. While at Buffalo, I inspected for shipment to Ontario and Quebec:—

Cars....	211
Number of hogs....	31,787

I was relieved from the above work in July, by M. Philps, V.S., who has since been moved to Bridgeburg, and I returned to Windsor and superintended the erection of a quarantine barn at this port, a building which was much needed, as a great deal of stock, generally in small lots, is brought in by way of Windsor.

On August 16, I started on a tour of inspection of stations north and west, calling at North Bay, White River, Schreiber, Port Arthur and Winnipeg, and returning by the Rainy River district, stopping off at Rainy River, Emo and Fort Frances, a detailed report of my trip was furnished the department at the time.

Late in the summer permission was granted to inspect transit stock at this point at night, and I superintended the erection of proper lighting stands at the M. C. R. and Grand Trunk Railway yards. Owing to the necessity of taking care of our large export trade in sheep and lambs to Buffalo the department issued a regulation that all sheep must be unloaded and certified to at Bridgeburg, which necessitated the erection of proper sheds by the G. T. Railway for inspection purposes, these were erected and fit for use early in September, the sheds previously erected by the M.C.R. being used for stock coming over the M.C.R. and the Canadian Pacific Railway, following out your instruction. I have given Mr. Philps, V.S., inspector in charge of Bridgeburg, needed assistance at various times, and I am pleased to report that up to the present time there have been no sheep detained, all being free from disease. Owing, greatly to the stringent regulations issued in April last, compelling hog cars to be equipped with close-fitting doors and ten-inch foot boards and not allowing hogs to be shipped in dirty cars, or to be doused while 'in transit' through Canada, and which regulations have been rigidly enforced by the inspector in charge at Windsor, the tone of this trade has improved greatly, and by lessening the chances of bringing disease into the country, will greatly facilitate the work of stamping out the contagious diseases which are now troubling the department.

Especial care has been devoted to cleansing and disinfection of stock cars used in conveying hogs from United States markets to packing factories in Canada, and those cars used in carrying stock from infected districts to packing houses.

At the beginning of the summer a great deal of dissatisfaction was expressed by some shippers where the different regulations were enforced, but I am pleased to state that most of them are now well pleased to obey the regulations in every particular.

In concluding my annual report, I may state that my observations this year have shown me the great results derived by your department from the measures used in preventing the spread of disease. The benefits of careful guarding of the transit trade in hogs, the rigid enforcement of the dipping regulations, and the cleansing and disinfecting of premises, on which diseased animals were found, are now very apparent.

I have the honour to be, sir,

Your obedient servant,

The Veterinary Director General,  
Ottawa, Ont.

GEO. W. ORCHARD,  
Inspector.



SESSIONAL PAPER No. 15a

ARTHUR BROWN, V.S.

SARNIA, October 31, 1905.

SIR,—I have the honour to submit my report of work done for the Department of Agriculture from November 1, 1904, to October 31, 1905.

On October 17, 1904, thirty-one hogs returning from St. Louis exposition were placed in quarantine. They consisted of two herds, thirteen and eighteen respectively. A week later the smaller herd showed symptoms of hog cholera; on November 4, the herd was destroyed, they having contracted the disease.

On November 22, sixteen of the other herd were slaughtered (two having died) and a careful postmortem examination held on each hog; ten were diseased with hog cholera and six were apparently healthy, although in contact. I may state that the owners of these hogs considered it a hardship and quite unnecessary to be detained in quarantine, but you insisted and had it not been for this good judgment the country might have suffered a heavy loss as both these firms ship hogs to all parts of Canada.

The domesticated animals in this locality are generally healthy, there being no contagious diseases among them with the exception of a few cases of tuberculosis and actinomycosis.

The following animals have been inspected by me during the past year:—

*For Import—*

Horses.. . . .	247
Cattle.. . . .	76
Sheep.. . . .	221
Hogs.. . . .	1,222

*For Export—*

Sheep.. . . .	2
Swine.. . . .	2

Since April 1, I have examined 1,318 cars containing hogs crossing at this port from the United States, most of them going through Ontario to Buffalo, U.S., in bond. I found it necessary to return 35, they not being in a proper condition to proceed to their destination.

I have the honour to be, sir,

Your obedient servant,

ARTHUR BROWN,

*Inspector.*

The Veterinary Director General,  
Ottawa.

M. PHILPS, M.D., V.S.

BRIDGEBURG, ONT., October 31, 1905.

SIR,—I have the honour to submit to you my annual report for the year ending October 31, 1905.

During the first eight months of the year my work was principally in the quarantined area in the counties of Kent and Essex, and consisted of dealing with outbreaks of hog cholera inspections of shipments of live hogs and visiting farms already under quarantine to see that the cleansing and disinfecting regulations had been satisfactorily carried out.



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From November 1, 1904, to June 27, 1905, I dealt with nine cases of hog cholera involving the slaughter of 187 hogs, for which the department paid the sum of \$808.32. I inspected at the various shipping points in the quarantined district ninety-seven cars containing 9,667 live hogs consigned to the packing houses mostly at London, Hamilton and Toronto.

I visited thirty-three farms previously placed under quarantine and found that the cleansing and disinfecting regulations had been faithfully carried out and I accordingly forwarded recommendations for their release to the department.

On June 27, I received instructions from you to proceed to Buffalo, N.Y., to relieve Dr. Orchard. My work in Buffalo consisted of the inspection of live hogs imported by the different Canadian packing houses. Up to the present date I have inspected seventy-six cars containing 10,260 live fat hogs imported by the packing houses of Ingersoll, Toronto, Hamilton, London, Peterborough and Hull, Que. On August 25, I was instructed to make my headquarters at Bridgeburg, Ont., where I have inspected the sheep exported to the States. So far there have been 47,707 sheep exported from this point, and sixty-seven horses were imported.

I have the honour to be, sir,  
Your obedient servant,

The Veterinary Director General,  
Ottawa, Ont.

M. PHILPS,  
Inspector.

F. A. JONES, V.S.

WINDSOR, ONT., October 31, 1905.

SIR,—I have the honour to submit my report of stock inspected at the Windsor quarantine station during the year ending October 31, 1905.

Hog cholera came under my notice on several occasions which I reported to Drs. Orchard or Perdue, who acted promptly and there was no further spread of the disease.

In addition to my duties as quarantine inspector, I have inspected at the M.C.R. Stock Yards, Detroit, 4,318 hogs consigned to the Ingersoll Packing Company of Ingersoll, Ont. They were shipped in thirty-three cars.

The following is a statement of animals received into quarantine, also stock requiring inspection :—

<i>For Export—</i>	
Cattle.. . . .	28
Sheep.. . . .	1
Swine.. . . .	17
<i>For Import—</i>	
Horses .. . . .	101
Mules .. . . .	44
Cattle .. . . .	57
Swine .. . . .	17
Sheep .. . . .	21
Goats .. . . .	1

I have the honour to be, sir,  
Your obedient servant,

The Veterinary Director General,  
Ottawa.

F. A. JONES,  
Inspector.



SESSIONAL PAPER No. 15a

J. KIME, JR., V.S.

CHATHAM, October 31, 1905.

SIR,—I have the honour to submit to you a report of the work done by me during the past year, from November 1, 1904 to October 31, 1905.

During the year I have inspected forty-four car-loads of hogs for shipment, the total number of hogs being 4,064.

No hogs have been slaughtered this year by me, all reports of outbreaks being reported to M. B. Perdue, the officer in control in this district.

I have the honour to be, sir,

Your obedient servant,

JOSEPH KIME, JR.,  
*Inspector.*

The Veterinary Director General,  
Ottawa.

J. R. THORNE, V.S.

WALLACEBURG, ONT., October 31, 1905.

SIR,—I beg to submit my annual report for the year ended October 31, 1905, as follows:—

It pleases me to inform you that very little contagious disease in animals has existed in this district during the past year.

## HOG CHOLERA.

Only two cases of hog cholera have been reported to me in this district in the past twelve months, each of these being in the Gore of Chatham in the county of Kent.

Fifty-two shipments comprising 6,072 fat hogs have been made under my inspection during the past year from this district, direct to the packing houses for immediate slaughter.

I have the honour to be, sir,

Your obedient servant,

J. R. THORNE,  
*Inspector.*

The Veterinary Director General,  
Ottawa, Ont.

W. B. ROWE.

BLEINHEIM, October 31, 1905.

SIR,—I have the honour to submit herewith my annual report ending October 31, 1905.

During the past year, my work for the department has been principally inspecting hogs for shipment. I have inspected seventy-nine cars containing 6,232 fat hogs



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for immediate slaughter and consigned to various packing houses. I also visited several farms under quarantine to see if they have been cleansed and disinfected in a satisfactory manner.

Acting under instructions I visited a farm in South Colchester, as it was reported that they had some disease amongst their hogs, but it proved to be nothing but a form of stomach trouble, caused by improper food.

I hereby state that no other disease of a contagious nature has come under my notice during the past year.

I have the honour to be, sir,

Your obedient servant,

The Veterinary Director General,  
Ottawa, Ont.

W. B. ROWE,  
*Inspector.*

G. H. BELAIRE, V.S.

PEMBROKE, October 31, 1905.

SIR,—I have the honour to present my annual report for the year ending October 31, 1905.

GLANDERS.

During that period I have made forty-six tests with mallein; the horses were all in small lots being in sixteen different places:—

Horses tested first time.....	46
“          second time..	4
Ceased reactors.....	4

Eight horses showing clinical symptoms of glanders and which reacted to the mallein test were destroyed.

Two horses showing well marked clinical symptoms were destroyed without the application of the test.

Four horses which reacted to the mallein test, but showing no clinical symptoms were destroyed, making in all fourteen horses destroyed.

Nine of these horses were destroyed under the new compensation clause which came in force on March 25, 1905, the owners receiving compensation for these horses.

The present system of dealing with glanders, under the new regulations, is a long forward step in the right direction and has proven very satisfactory to the public in general. The compensation paid by the government is, no doubt, instrumental in bringing out new centres of infection previously unsuspected.

MANGE IN HORSES.

Five cases of mange in horses came under my notice; they were in three different places. I immediately quarantined them, ordered treatment of the horses and thorough disinfection of the premises. These places were recommended for release when I was satisfied that mange no longer existed therein and that the premises were thoroughly cleansed and disinfected.

I have the honour to be, sir,

Your obedient servant,

The Veterinary Director General,  
Ottawa, Ont.

GEO. H. BELAIRE,  
*Inspector.*



SESSIONAL PAPER No. 15a

D. HENDERSON, V.S.

GLENCOE, October 31, 1905.

SIR,—I have the honour to submit to you my annual report for the year ending October 31, 1905.

During the year I superintended the dipping in lime and sulphur dip of 1,488 sheep, all of which were dipped the second time at intervals of from ten to twelve days from the first dipping. The above dip proved an excellent one, no bad results following in any case.

I inspected 186 sheep at different stations for immediate slaughter under the departmental order of March 23, 1905.

I issued thirteen health certificates for eighty-five sheep being exported to the United States.

I have the honour to be, sir,  
Your obedient servant,

D. HENDERSON,  
*Inspector.*

The Veterinary Director General,  
Ottawa.

A. E. JAMES, V.S.

OTTAWA, October 31, 1905.

SIR,—I have the honour to submit herewith, my annual report for the year ending October 31, 1905.

*Glanders—*

One clinical case—destroyed.

## TUBERCULOSIS.

Tested with tuberculin for Gunn & Sinclair for export to South Africa, 109 head milch cows (grade.) Reactions, 3.

51 head grade for Department of Agriculture for export to South Africa. Reactions, 0.

3 Head pure bred Ayrshire heifers for export to Japan. Reactions, 0.

I have the honour to be, sir,  
Your obedient servant.

A. E. JAMES,  
*Inspector.*

The Veterinary Director General,  
Ottawa.

J. B. HOLLINGSWORTH, D.V.S.

OTTAWA, October 31, 1905.

SIR,—I have the honour to submit my report from the date of my appointment, July 1, 1905 to October 30, 1905. I have tested six horses on four different farms, two



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of these reacted and were destroyed. I also destroyed one horse without testing which showed clinical symptoms of the disease. In addition I have inspected five quarantined farms and found that the cleansing and disinfecting orders have been satisfactorily carried out.

I have also inspected horses and premises where mange did exist and found animals successfully treated and no new cases of mange.

I have the honour to be, sir,  
Your obedient servant,

The Veterinary Director General,  
Ottawa.

J. B. HOLLINGSWORTH,  
*Inspector.*

W. C. McGUIRE, D.V.S.

CORNWALL, October 31, 1905.

SIR,—I have the honour to submit to you my report from the date of my appointment, April 25, 1905, to October 31, 1905. During the above period I have inspected 1,320 sheep for exportation to the United States, all of which I found in a healthy condition.

I have the honour to be, sir,  
Your obedient servant,

The Veterinary Director General,  
Ottawa, Ont.

W. C. McGUIRE,  
*Inspector.*

D. McALPINE, D.V.S.

BROCKVILLE, ONT., October 31, 1905.

SIR,—I have the honour to submit to you my report of the year 1905, October 31. During the year, I examined for export, four hundred and thirty-two sheep, and twenty-eight head of cattle. I was called to investigate two cases of suspected glanders, but upon two injections of mallein with no reaction they were discharged. One case of suspected hog cholera, where twenty-one hogs had died, but on investigation found death was due to injudicious feeding.

I have the honour to be, sir,  
Your obedient servant,

The Veterinary Director General,  
Ottawa, Ont.

D. McALPINE,  
*Inspector.*

J. M. FAWCETT, V.S.

PALMERSTON, October 31, 1905.

SIR,—In the month of May, I examined eleven cars and saw that they were properly cleansed and disinfected. In June there were ten; July, one; August, two. These were all cleansed before they were used again. This is all I have done.

I have the honour to be, sir,  
Your obedient servant,

The Veterinary Director General,  
Ottawa, Ont.

J. M. FAWCETT,  
*Inspector.*



SESSIONAL PAPER No. 15a

H. J. LUNDY, V.S.

EMO, ONT., October 31, 1905.

SIR,—I beg leave to submit my annual report for the year ending October 31, 1905.

I have examined eight head of cattle during the year, all of which I found free from disease.

I have the honour to be, sir,  
Your obedient servant,

H. J. LUNDY,  
*Inspector.*

The Veterinary Director General,  
Ottawa, Ont.

T. E. WATSON, V.S.

NIAGARA FALLS SOUTH, October 31, 1905.

SIR,—I have the honour to submit to you the following report of animals inspected by me at this port of entry during the year ending October 31, 1905.

Horses...	27
Cattle....	18
Sheep....	34
Hogs....	17

Three of the cattle were held and subjected to the tuberculin test, none of them reacting.

Hog cholera which we have had more or less of for several years has not made an appearance in this district this year.

I have the honour to be, sir,  
Your obedient servant.

THOS. E. WATSON,  
*Inspector.*

The Veterinary Director General,  
Ottawa, Ont.

C. D. McGILVRAY, M.D.V.

WINNIPEG, October 31, 1906.

SIR,—I have the honour to submit herewith my report on the diseases dealt with by me from the time of my appointment as a veterinary inspector, on February 25, until October 31, inclusive. This period of eight months has been taken up chiefly in dealing with outbreaks of

GLANDERS

throughout the province of Manitoba, during which time I have submitted 747 animals to a first mallein test. Out of these 26 were retested a second time at the expiration



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of 40 days from the time of the first test, 20 out of this 26 had not reacted to a first test, and as they again proved negative to the second test, were released, the other six had reacted either typically or atypically to the first test, and upon being submitted to a second test with mallein, three of them gave a typical reaction and were therefore slaughtered, the remaining three having failed to react to the second test, were again submitted to a third mallein inoculation at the expiration of 60 days from the time of the second test and again they proved negative to the test.

These three latter ceased reactors, *i.e.*, they had reacted to the first test but failed to react to the two subsequent tests conducted at intervals of 40 and 60 days respectively, have not been released but are allowed to be retained by the owner for use under the following restrictions contained in a license form, *viz.*: that they are not to be disposed of nor allowed to come in contact with other horses, but stabled separately and to be fed and watered in separate utensils, they are likewise not to be stabled in any public stable or stalls and are to be kept available for inspection at any time by an authorized veterinary inspector. In all 287 animals have been destroyed by me for glanders, of which 284 were destroyed as results of a typical reaction to a first mallein inoculation and the other three as result of reaction of both first and second tests.

Out of the 287 slaughtered, 101 were showing more or less clinical symptoms of the disease, thus leaving 186 contact infected animals slaughtered as result of a typical reaction to the mallein test.

#### RECAPITULATION.

747 animals submitted to a first mallein test.

26 animals submitted to a first and second mallein test.

3 animals submitted to a first, second and third mallein tests.

284 animals slaughtered as result of a typical reaction to a first mallein test (101 of these were showing more or less clinical symptoms of glanders).

3 animals slaughtered as result of reaction to both first and second mallein tests.

20 animals proved negative to both first and second mallein tests, therefore were released.

3 animals reacted to a first mallein test but failed to react to second and third tests conducted at intervals of 40 and 60 days respectively and are therefore classed as ceased reactors.

A question may arise as to why should the disease be so prevalent and widespread in this to you new territory, to this there can only be one reply, the lack heretofore in this province of an adequate and effective policy of dealing with outbreaks of glanders. Previous to February, 1905, at which time this province came under the direct control of the Dominion Contagious Diseases Act, there was no provision made for the compensation of owners for animals destroyed for glanders except wherein provided by the rural municipalities, hence in many outbreaks of the disease the clinically affected animals were the only ones dealt with. The remaining contact animals were not in many instances subjected to the mallein test and were either overlooked or simply held under observation for a short period awaiting developments of clinical symptoms. As you are aware quarantining in the case of contact infected animals is of little use except the period were an extended one of months and years instead of weeks, as animals affected with an occult or latent glanders (pulmonary glanders) may be to outward appearances apparently free from the disease and remain so for a considerable length of time and still in the meantime be capable of infecting and thus transmitting the disease to other healthy animals giving rise to fresh outbreaks.

Again, where the contact infected animals were subjected to the mallein test and did react slaughter was not in all cases enforced and could not be for want of an adequate compensation policy.

Hence in some cases the owners now being placed in possession of information as a result of the mallein test giving them a knowledge as to the condition of these con-



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tact infected animals, an information and knowledge to which they had no moral right to and under existing conditions never should have had, they very often at a favourable opportunity disposed of these reacting animals to some unsuspecting purchaser from a distance.

It will thus be seen that prior to that time, (February, 1905), when this province came under your control there was prevalent what might be called a migration of contact infected animals from one part of the province to another, thus constituting new areas of infection and giving rise sooner or later to fresh outbreaks of glanders.

I am satisfied, however, that the regulations and methods of dealing with outbreaks of glanders inaugurated by you here in February, and now in force of submitting all animals affected with or suspected of being affected with glanders to the mallein test and destroying all reactors is the best and most effective means of dealing with and eradicating outbreaks of the disease and that with the least material sacrifice. This would only be obtained by means of compensation being paid to owners for animals destroyed. That the owners themselves realize this fact and appreciate this material assistance rendered, viz.: Adequate compensation being paid for animals destroyed is sustained and borne out by the number of requests received by letter from owners whose animals have been in contact more or less with other glanderous animals that their animals be submitted to the mallein test by authorized veterinary inspectors, and are willing to abide by the results of the test, consenting to have the animals which react to the test destroyed and thus eradicate from their premises animals to which strong suspicion must always attach even if they do not in the near future develop clinical symptoms of the disease. Another source of infection has been the number of contact infected horses (though to outward appearances apparently healthy horses at the time of importation), sold by dealers in the United States to unsuspecting purchasers, bought over here and sold to parties in Manitoba upon whose premises they sooner or later give rise to an outbreak of glanders. The class of horses chiefly responsible for this are the unbroken range horses brought from the States of Dakota and Montana, conclusive evidence of which I have placed in your hands from time to time in my reports.

## GLANDERS IN MAN.

One case came under observation wherein a young man, aged 22 years, contracted glanders from a clinically affected mare on his father's premises. The deceased became inoculated on August 20 and died on September 8, the disease lasting a period of 18 days.

The following symptoms and stages of the course of the disease were obtained from information received from the parents and the attending physician, Dr. Ross, of Selkirk.

*Period of incubation.*—Was of two days' duration as diseased unquestionably became inoculated on August 20 and on August 22, or two days later, he first began to ail and complained of feeling sick and languid.

*Period of premonitory illness.*—Began on August 22 when patient first began to ail, on the 23rd appetite became impaired and patient began to complain of pains in region of loins and hips.

*Period of pronounced illness.*—This began on August 26, on which date patient became suddenly worse, refused all food, complained of pains in all his joints (the articulation and synovial membranes becoming involved). On this date a physician was called and diagnosed the case as probable typhoid fever.

*Period of eruptions or nodular stage.*—On September 3, or fourteen days after time of inoculation, the first clinical objective symptom appeared as a large nodule or pimple on the forehead which was hot and painful to the touch. Two days later, September 5, nodules were rapidly increasing in numbers and size and appeared now simultaneously on the chest, arms and legs, and these became extremely painful as well as the joints affected.



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*Pustular period and ulcerative stage.*—On September 6, the nodules had developed into pustules and became ulcerous, the attending physician became suspicious and called in another physician in consultation who diagnosed disease as glanders, word was sent to this branch that an inspection be made of their horses. I went and examined horses on the premises and found one aged mare showing well marked clinical symptoms of glanders. From this date the pustules and ulcers developed very rapidly, the nose and eyelids became ulcerated and discharged a viscid bloody discharge, patient sank very rapidly and succumbed to the disease on September 8, literally covered with pustules and ulcers.

#### MANGE OF HORSES.

Several outbreaks of mange were reported during the past summer. I inspected eight outbreaks and quarantined on premises affected sixty-four animals in all. Of these, forty-two have been successfully treated by the owners and being cured and free from the disease have been released. The remaining twenty-four are still in quarantine under treatment and will be kept under quarantine regulations until satisfied that they are cured and free from the disease. Owners have very readily adopted satisfactory treatment along the lines recommended in the mange bulletin published by the department.

#### SWAMP FEVER (SO-CALLED).

Several outbreaks reported as suspected glanders, have upon inspection proved to be the disease known here as 'swamp fever.' Under this head is included all febrile conditions of an intermittent type characterized by periodical exacerbations sooner or later resulting in a progressive emaciation, anæmic membranes, œdematous swellings of limbs, sheath and under abdomen, a critical polyuria, dicrotic pulse, cardiac insufficiency associated with venous regurgitation, in spite of a well maintained appetite emaciation reaches an advanced stage, inco-ordination of movement becomes marked especially hind extremities, the course of the disease is usually prolonged and invariably terminates fatally. Treatment has been unsuccessful. This disease, however, has not been so prevalent in the province during the past summer and is apparently decreasing.

#### MALARIAL AND TYPHO-MALARIAL FEVER.

Under this head is included acute febrile conditions ushered in by a high initial temperature, partial or complete loss of appetite, marked dullness, injection of mucous membranes sometimes icteric (yellowness) thoracic complications with tendency towards pleuratic and pericardial exudations, cardiac complications with a tendency towards the formation of ante-mortem clot, presence of the costal groove or (heave line), œdema of limb and sheath, inco-ordination of movement in some cases. A cough is seldom if ever met with as a primary affection in this disease. The disease usually runs an acute or sub-acute course, mortality is high especially where animals are kept at work too long, it is, however, amenable to treatment and quite a large percentage recover if appropriate treatment is resorted to in early stages and animals are refrained from all work until entirely recovered.

It has been quite prevalent throughout the province this summer.

#### INFLUENZA ; TYPHOID-INFLUENZA, SHIPPING FEVER, ETC.

Quite a number of reported outbreaks of suspected glanders have upon inspection proved to be nothing more or less than one of the various 'catarrhal fevers.' Under this head is included all infectious febrile conditions associated with an affection of the respiratory tract; ushered in by a high initial temperature, congestion and swelling of the eyelids and a 'weeping' from the eyes very frequently, total inappetence



## SESSIONAL PAPER No. 15a

usually, cough, quickened pulse and increased respiration pulmonary and abdominal complications sometimes occur. These diseases are quite amenable to successful treatment and were very prevalent here during early summer, in fact very few large stables were exempt or escaped having a siege of it, but mortality was low.

## BLACK-LEG OR QUARTER-ILL.

Several outbreaks amongst cattle have been reported from various parts of the province, it is, however, chiefly indigenous and restricted to the lands adjacent to and in the larger lake districts (Lakes Winnipeg and Winnepegosis).

No further action was taken in these reported outbreaks otherwise than informing owners as to the nature of the disease and its prophylaxis, advising owners to resort to the protective inoculation of animals by means of the blacklegine furnished by the department at a small initial cost, the removal of animals from infected pastures and disposal of the carcasses of dead animals.

I have the honour to be, sir,

Your obedient servant,

C. D. MCGILVRAY,

*Inspector.*

The Veterinary Director General,  
Ottawa, Ont.

F. TORRANCE, B.A., D.V.S.

WINNIPEG, October 31, 1905.

SIR,—I have the honour to submit the following report on the investigation of swamp fever of horses, carried on during the past year by Dr. Bell and myself. Our first case was secured in June, a sorrel mare, aged nine, showing the usual symptoms of the disease, anaemia, emaciation, fever, &c. A blood count showed the red corpuscles reduced to 2,700,000, and as it was evident that she could not live, we decided to kill her at once, and make cultures from various fluids of the body. She was killed by intravenous injection of strychnine, June 24, and cultures made from several organs and fluids, especially the cerebro-spinal fluid, which we were particularly desirous of testing in consequence of the symptoms of inco-ordination so prominent in the disease. Our cultures, however, proved sterile.

Some time elapsed before other cases could be procured, as the disease is fortunately decreasing, and cases are not nearly as numerous, as a few years ago. At length I was able to get two cases through the kindness of Dr. Taylor, of Portage la Prairie. One of these, however, was so far advanced, that it became exhausted by the railway journey, and could not reach the stable, but had to be killed and utilized for post-mortem examination only. The other one remained under observation for some weeks, during which frequent examinations were made of the blood, and a special study of the fœces was made. The object of this was to discover whether any special organisms were present in the intestinal tract, and if so to determine their relationship to the disease. Only the ordinary fauna of the intestine were found. We were disappointed with this result, as Dr. Bell thinks the disease is probably caused by auto-intoxication from the intestinal tract by absorption of toxins of bacterial origin. This is a point requiring further study. Unfortunately, this case died suddenly, and we were unable to make the post-mortem for some ten hours, so that our cultures were of no use. The usual gross lesions were observed, and the case was typical of the disease.

Two other cases were under observation, and examined post-mortem, but without throwing any light upon the pathology of the disease, as neither of them could be considered typical.



Of all the cases under observation this year, only one of them proved a suitable and typical case of the disease, the others being either too advanced or complicated by other diseases, so that we were hampered by lack of material. In one respect this is a fortunate circumstance, for it shows that the disease, which a few years ago, was a serious drawback to agriculture in this part of Manitoba, is much less prevalent than it was. Whether this is due to climatic changes, or to improved drainage and sanitation of stables, or other causes, we cannot at present determine.

However, we have reached a point in our investigation, where we can reasonably exclude trypanosomata or plasmodia from the possible causes of the disease. The blood has been examined so often, and in such a number of cases, that if either of these parasites had been present at any time, they could hardly have escaped detection. The marked resemblance between this disease and 'Surra,' lent a strong probability to the theory of a blood parasite being the cause, and our work has hitherto been largely along that line. We now turn to another field of investigation, in which we have already done some work, the intestinal tract. Here we hope to find bacteria, secreting toxins having a hæmolytic action on the blood, and in this way producing the anæmia characteristic of the disease. This is a task of great difficulty, owing to the presence in the intestine, normally, of a larger number of harmless bacteria from which the pathogenic ones can only be separated by tedious laboratory methods.

I have the honour to be, sir,  
Yours respectfully,

The Veterinary Director General,  
Ottawa.

F. TORRANCE, B.A., D.V.S.

CHAS. LITTLE, V.S.

WINNIPEG, October 31, 1905.

SIR,—I have the honour to submit to you this my annual report for the year ending October 31, 1905.

The following is the number of animals imported from the United States:—

Horses.. . . .	3,520
Mules.. . . .	331
Cattle.. . . .	2,530
Sheep.. . . .	98

I have kept a strict watch on all cattle shipped from the western ranches so as to prevent any affected with mange escaping that might have been overlooked by the inspectors when loading or developed in transit. The number shipped through to date is 49,748 and 9,208 shipped to Winnipeg for home consumption. I am pleased to state that a very few with any appearance of mange arrived here, even a good deal better showing than last year.

.. TUBERCULOSIS.

I have tested five head of pure bred cattle for export to the United States and found all healthy.

GLANDERS.

Since February 25 I have made 37 tests with mallein. The total number destroyed was 40, twenty-four of which were destroyed on clinical symptoms alone and sixteen after being tested.

I have the honour to be, sir,  
Your obedient servant,

The Veterinary Director General,  
Ottawa.

CHAS. LITTLE,  
Inspector.



SESSIONAL PAPER No. 15a

J. P. MOLLOY, M.D.V.

MORRIS, MAN., October 31, 1905.

SIR,—I have the honour to report that, beginning April 19, 1905, and ending October 31, 1905, that I have subjected to the mallein test four hundred and seventy four horses, destroyed two hundred and twenty-nine, ninety-three of which were clinical and a hundred and thirty-six contact infected animals. Two hundred and fifteen were destroyed on first test and fourteen on the second test.

I have the honour to be, sir,

Your obedient servant,

J. P. MOLLOY,  
*Inspector.*The Veterinary Director General,  
Ottawa.

P. A. ROBINSON, V.S.

EMERSON, MAN., October 31, 1905.

SIR,—I beg to submit my annual report of stock inspected at this port for the twelve months ending October 31. During the year just closed, I have inspected 1,010 settlers' horses and 1,317 cattle. The number of horses imported for sale is 1,301. The inclosed statement shows the number of animals imported each month.

At the Port of Gretna I have inspected 70 horses imported for sale.

I have the honour to be, sir,

Your obedient servant,

P. A. ROBINSON,  
*Inspector.*The Veterinary Director General,  
Ottawa.

R. D. SCURFIELD, M.D.V.

CRYSTAL CITY, MAN., October 31, 1905.

SIR,—I have the honour to report on the health of the animals inspected by me in this district. The most of our entries here are settlers from North Dakota, U.S., who cross the boundary here destined principally to the North-west Territories. The stock imported has been of an average quality, some very good cattle having been brought in by settlers. I have inspected and submitted to the mallein test 65 horses suspected of being affected with glanders, of which 23 were slaughtered by consent of owners and the department. Most of these slaughtered were clinical cases. I have had one outbreak of blackleg, in which five cases had died. I advised vaccination and have had no further trouble since. I had a large outbreak of influenza in spring. The type is now gradually dying out, otherwise the health of our animals is fairly good.

I have the honour to be, sir,

Your obedient servant,

R. D. SCURFIELD,  
*Inspector.*The Veterinary Director General,  
Ottawa.



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W. LITTLE, V.S.

BOISSEVAIN, MAN., October 31, 1905.

SIR,—I have the honour to submit to you the following report of animals inspected by me at the ports of Deloraine and Killarney, Man., for the year ending October 31, 1905 :—

Animals inspected at Deloraine—

Horses.. . . . .	303
Mules.. . . . .	8
Cattle.. . . . .	214
Sheep.. . . . .	

Of the above, 53 horses were for sale; 250 horses, 8 mules, and 214 cattle were settlers' effects.

Animals inspected at Killarney—

Horses.. . . . .	456
Mules.. . . . .	10
Cattle.. . . . .	299
Sheep.. . . . .	61

Of the above 63 horses were for sale; 393 horses, 10 mules, 299 cattle, and 61 sheep were settlers' effects.

I have had one outbreak of glanders among horses during the year, three animals being affected. One horse showing clinical symptoms was destroyed at once and the other two were subjected to the mallein test, and both giving a suspicious reaction, were quarantined and retested in 30 days, both giving a high reaction, when they were slaughtered. Two of these animals came into Manitoba from Billings, Mont, during the summer.

I have had one outbreak of mange in horses during the year, eight animals being affected. They were treated by the dipping tank process. The disease was introduced into this herd by western horses brought from Alberta.

I have the honour to be, sir,  
Your obedient servant,  
W. LITTLE,  
Inspector.

The Veterinary Director General,  
Ottawa.

WM. LESLIE, V.S.

MELITA, MAN., October 31, 1905.

SIR,—I have the honour to submit the following report of stock entered at the customs port of Melita for the year ending October 31, 1905 :—

Horses.. . . . .	180
Mules.. . . . .	8
Cattle.. . . . .	60

Of the above stock entered 133 horses and three cattle were for sale, the balance being entered as settlers' effects.



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I also saw one outbreak of glanders on a farm where eight horses were subjected to the mallein test and having reacted were promptly valued and destroyed.

I have the honour to be, sir,  
Your obedient servant,

The Veterinary Director General,  
Ottawa.

W. LESLIE,  
*Inspector.*

J. A. STEVENSON, V.S.

CARMAN, MAN., October 31, 1905.

SIR,—I have the honour to submit my annual report of inspections for the year ending October 31, 1905.

## GLANDERS.

Number tested by mallein test first time, 30; number destroyed, 3.

## MANGE IN HORSES.

An outbreak was reported from the west end of this district. Visited this part and quarantined two horses and gave owners proper instructions.

The health of animals in this district is fairly good.

I have the honour to be, sir,  
Your obedient servant,

The Veterinary Director General,  
Ottawa.

JAS. A. STEVENSON,  
*Inspector.*

W. A. SHOULTS, V.S.

GLADSTONE, MAN., October 31, 1905.

SIR,—I have the honour to submit my report for the year ending October 31, 1905.

## GLANDERS.

Since February 1, I have applied the mallein test to one hundred horses, twenty-nine of which reacted and were destroyed; fifteen horses exhibiting pronounced and unmistakable clinical symptoms of glanders were also slaughtered, making a total of forty-four horses destroyed for glanders.

## MANGE.

I have also had occasion to deal with three small outbreaks of mange, which involved only thirteen horses, and were controlled without difficulty.

I have the honour to be, sir,  
Your obedient servant,

The Veterinary Director General,  
Ottawa.

W. A. SHOULTS,  
*Inspector.*



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A. McMILLAN, V.S.

BRANDON, MAN., October 31, 1905.

SIR,—I have the honour to submit herewith the annual report of work performed by me for the Department of Agriculture for the year ending November 30, 1905.

I was instructed by the Veterinary Director General to proceed to the farm of John Alteman and investigate an outbreak of glanders, which I did on the 3rd of March. I found one case of clinical glanders, which I immediately destroyed, and tested the remaining six, four of the number reacting and were destroyed.

I have the honour to be, sir,  
Your obedient servant,

A. McMILLAN.  
*Inspector.*

The Veterinary Director General,  
Ottawa.

COMMISSIONER A. B. PERRY.

REGINA, October 31, 1905.

SIR,—I have the honour to submit herewith my annual report for the year ended October 31, 1905, on the work performed in the provinces of Alberta and Saskatchewan, for the Health of Animals Branch of the Department of Agriculture, by the veterinary staff under my directions, together with the reports of the individual inspectors, as follows:—

- General report—Inspector Burnett, Veterinary Surgeon R.N.W.M. Police.
- Battleford District—Veterinary Staff-Sergt. Meakings.
- Calgary District.—Veterinary Staff-Sergts. McVeigh and Busselle.
- Edmonton District.—Veterinary Staff-Sergt. Sweetapple.
- Lethbridge District.—Veterinary Staff-Sergts. Gallivan, Greenwood and Johnson.
- Maple Creek District.—Dr. Hargrave, V.S., Veterinary Staff-Sergts. Littlehales and Olsen.
- Macleod District.—Veterinary Staff-Sergts. White, Douglas, and Veterinary Sergt. McCreight.
- Prince Albert District.—Veterinary Staff-Sergt. Mountford.
- Regina District.—Veterinary Staff-Sergts. Ayre, Gray, Dennis, Mitchell and Perry.

The veterinary staff employed at this date is as follows :—  
Permanent—

Veterinary surgeons, members of R.N.W.M Police.. . . .	19
Civil practitioners, permanently employed.. . . .	3
Total.. . . .	22

The staff was temporarily increased during the enforcement of the compulsory dipping order in the quarantine area, and during the stock shipping season, by seven (7) civil practitioners, who were engaged for short periods.

In addition, civil practitioners were employed at irregular times, at Calgary and Battleford, where the permanent staff, either through press of business, or sickness, were unable to attend to the work.

This year the work has been carried on under the supervision of Inspector Burnett, veterinary surgeon of the R.N.W.M. Police, who has had eighteen years' experience



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in the western country, an experience that it is absolutely necessary that a veterinary surgeon should have, if the work of your department is to be successfully performed. Inspector Burnett's presence at headquarters has been of great advantage.

The staff is distributed in two provinces in accordance with the requirements of the work, the general idea being to have an inspector ready at hand in every part of the country, to deal promptly with any outbreaks. The distribution has varied, as the press of work in one district compelled the sending of assistance from another.

The work has been heavy, and with the staff available, large though it seems, the work has not always been kept up to date. I am able to assure you that the veterinary inspectors have worked very hard, and have, especially during the winter months, suffered a great deal of hardship in carrying out their duties. The outbreaks of disease are often long distances from any railway, and this means that many days are taken in dealing with them.

Six (6) veterinary inspectors are permanently stationed at the customs ports of entry: Twin Lakes, Coutts, Pendant d'Oreille, Willow Creek, Wood Mountain, and North Portal. They must always be in attendance at these points, so that their services are not available for the general work.

The inspection of stock, shipped from the quarantine area, occupies a great deal of time, especially during the four months of the export shipping season. This is work which cannot be delayed, and demands immediate attention.

The staff appears large, but when the 'fixed charges' on them are deducted, it greatly reduces what I might term the fighting force. I hope that in the near future the inspection of shipments may be suspended, when I shall be able to concentrate our efforts on the stamping out of disease.

We have to combat three prevalent forms of disease among horses: glanders, *maladie du coit*, and mange; and among cattle, mange. Other stock is healthy.

Inspector Burnett has dealt with all these in his report, and I only desire to add a few words to emphasize the wisdom of the policy adopted by you, and which is being persistently carried out by us.

Taking glanders first, which has caused the greatest loss of valuable stock. Wherever an outbreak is discovered or reported a veterinary inspector is promptly detailed to examine all the horses. His duty is to at once destroy all showing clinical symptoms; to test all which have been exposed to the contagion, and to destroy any reacting; to see that stables, &c., are thoroughly disinfected; and finally, to attempt to trace the source of the disease. This often leads to the discovery of other cases, where the same has to be again done. Frequently the source is found to be a large band of horses, running in the open. These are usually unbroken, and the difficulty of examining and testing, can only be understood by those accustomed to range horses.

As an instance of this I may mention where it was reported a number of horses, sold in Manitoba, from a ranch in the southern part of Saskatchewan, had been slaughtered on account of glanders. On examining the band, which numbered 500 head, two very bad cases of glanders were discovered. The whole band is now under quarantine, and these 500 unbroken horses must be tested, a tremendous task. These horses were imported from the United States two years ago, and were inspected at the time. As Inspector Burnett remarks, we will be exposed to the source of contagion, as long as large unbroken bands of horses are imported from the Western States.

As I write, suspicion has been aroused that a ranch, with over 1,500 head, has glanders. They have been rounded up and are now being inspected. Should these suspicions be verified, our past troubles will be as nothing in comparison.

Here again the horses were imported from the Western States.

I agree with Inspector Burnett that we cannot hope to entirely stamp out this disease for years to come, because of the large influx of settlers with stock, the importation of a large number of western horses for sale, and the negligence and carelessness of owners.



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The policy of allowing compensation for horses slaughtered on account of glanders, has greatly strengthened our hands, and has naturally pleased horse owners.

## HORSE MANGE.

It is gratifying to be able to report that this disease, which at one time seriously threatened the horse raising industry, is now almost eradicated. Two years ago the disease was very prevalent in the vicinity of Medicine Hat. Dr. Hargrave, our veterinary inspector at that point, deserves much credit for his success in dealing with it.

## MALADIE DU COIT.

This is a disease that was unknown in the west until two years ago, when it was discovered in the vicinity of Lethbridge.

An examination of the mares that had been running on the same range, showed that a number of them were diseased. As time went on, cases were found throughout Southern Alberta, especially in the Medicine Hat district.

Energetic measures were adopted by you. A suitable area for quarantining purpose was secured near Lethbridge, fenced, and corrals and squeezer built. A large number of animals suspected of the disease were collected at the quarantine, until a definite conclusion was arrived at as to the proper method of dealing with the disease. Having fully satisfied yourself of the existence of the disease, you decided that there was no other course but to slaughter all affected animals. This was done at the quarantine grounds under your personal direction last May.

It was then decided to deal with new cases, the same as with other contagious diseases, that is, to quarantine on the owner's place, and to destroy if found diseased.

Only four veterinary inspectors, who have had the necessary experience, were authorized to order slaughter.

You authorized the employment of three deputy inspectors, Medicine Hat, Lethbridge and Pincher Creek districts, to ride these districts and examine stallions and mares. Many cases were discovered and dealt with.

The presence of this disease and its seriousness is now generally known by the horse owners, who will, I hope, promptly report any cases.

I think that very energetic measures should be taken early in the spring, and I concur with Inspector Burnett that all the stallions and mares, in the area where the disease is known to exist, should be inspected.

Owing to the desirability of having a careful investigation of the course of the disease under the climatic conditions of the Northwest, you decided to establish an experimental station at the quarantine grounds at Lethbridge. A comfortable house, and commodious stable were erected for the necessary staff. Dr. Hadwen, V.S., was selected by you for this work.

## CATTLE MANGE.

Because of the marked success which resulted from last year's treatment of all cattle for mange, it was again decided to enforce the compulsory dipping order.

The time for dipping was fixed between August 15 and October 31.

The area quarantined was slightly less than last year. Roughly speaking, it was that portion of Alberta south of the line between Townships 38 and 39 and the southwestern corner of Saskatchewan.

This area was divided into 13 districts, with a veterinary inspector in charge of each. A large number of deputy inspectors were employed, so that the work, being carefully supervised, would be thoroughly done, and the treatment rendered effective.

The results have been satisfactory, although opposition was met with, and it was principally because the opposed claim their herds were free of disease, and not, as in many cases last year, that the treatment was dangerous, and, as even some claimed, positively harmful.



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It is not to be wondered at that objections should be taken to an order that directed that over half a million head of cattle, scattered over 50,000 square miles, should be treated in the space of 2½ months. It affected hundreds of owners, owners of a single animal, owners of a thousand head. Protests were made, applications came in for exemption by the score, but by firmness and tact, these troubles were largely overcome, and I think I am justified in reporting that the order has been satisfactorily complied with. Some districts report absolute compliance, others that the second dipping has not been universal, because of the bad weather in October.

The total treated to the date of this report were:—

First dipping.. . . .	520,828
Second dipping.. . . .	392,239

As an instance of the magnitude of the work, I may mention that one rancher alone used 20,000 lbs. of sulphur. I am not aware that any such attempt was ever made in any country to combat a contagious disease.

The government has spent a large amount of money in carrying out the order, but no one will deny that it has been wisely and well spent. The burden on the cattle owners has been heavy, but it is as nothing to the large losses which occurred every winter as a result of the disease, nor to the risk which they ran of being shut out of the English market.

Our facilities along the boundary line for the inspection of stock have been increased.

At North Portal, where so many American settlers enter the west with their stock, we have erected an examining platform, shelter sheds, squeezer, and complete dipping plant.

At Willow Creek, south of Maple Creek, immediately on the boundary, a standard inspecting station has also been built.

There are now six fully equipped stations at the following points: North Portal, Wood Mountain, Willow Creek, Pendant d'Oreille, Cardston, and Coutts. All are in excellent condition, and will require only slight repairs for years to come as they have been very substantially constructed.

The only trouble has been with the heating apparatus. The Daisy boiler, to heat the dip, has not proved satisfactory, as the flues clog, and cannot be cleaned readily. It has been proved that heating by a steam boiler is the only satisfactory method, and I recommend that those stations now equipped with the Daisy boiler, be supplied with steam boilers of 15 h.p.

I have again to call your attention to the danger of the introduction of contagious diseases by American cattle, which drift into Canada. There is no way to effectively prevent this, except by fencing the boundary line. It seems idle to erect, at heavy expense, inspection and dipping stations along the boundary, to adopt rigorous regulations for the treatment of our own stock and then to expose our herds to infection by contaminated American stock.

In closing this report, I cannot but refer to the great advantages which have resulted from your frequent visits to the west, and the close personal touch you have maintained with the stock owners. If the important regulations dealing with the stock interests have been carried out so successfully, and with the least possible friction, it has been for two reasons; first, the generous treatment by granting compensation; and secondly, to the fact that you have met and consulted the people concerned, discussed the measures to be taken, explained the dangers threatening their interests, and impressed them that only their good was being sought, and that the Department of Agriculture was a friend, and only existed for their benefit.

I have to thank you on behalf of the officers of the force charged with duties for your department, and the veterinary staff, for the generous treatment received from



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the Department of Agriculture, and for the support invariably given in carrying out the regulations.

I have the honour to be, sir,

Your obedient servant,

A. BOWEN PERRY,

*Commissioner.*

The Veterinary Director General,  
Ottawa.

J. F. BURNETT, V.S.

REGINA, October 31, 1905.

The Commissioner,  
Royal Northwest Mounted Police,  
Regina.

SIR,—I have the honour to submit herewith my annual report for the year ending October 31, 1905.

On December 1, 1904, I took over general supervision of the work in the Territories under your direction, and since that time good progress has been made in getting contagious and infectious diseases then prevalent under control.

The undertaking was an immense one from the very fact that prior to 1902 no concerted action had been taken to prevent the spread of these diseases, which were not only spreading rapidly within the Territories, but affected animals were being brought in by settlers. (I refer here more particularly to glanders, a disease which may be latent in the system for years before any symptom is visible.) Appeals from ranchers and settlers asking to have their horses examined have been very frequent, more especially since compensation has been allowed for animals presenting clinical symptoms. In the majority of cases where inspectors were asked for disease was found, while in a few the trouble was due to some local cause such as decaying teeth, &c., and in a few cases there was absolutely nothing wrong.

Glanders among horses is the most serious problem we have to contend with, and while we have not succeeded in eradicating it, we have, I think, cleaned it out of certain districts which were formerly distributing points and from which it was carried to all parts of the country. Glanders, so far as I have been able to learn, was first brought to the Northwest Territories in 1882 by horses that were purchased for use on the trip made by the Marquis of Lorne. To what extent the disease now found in the country is attributable to that first outbreak I am not prepared to say, but I have no doubt that some of the cases handled in recent years trace back to horses turned loose on the prairie during that trip.

Perhaps the importation that proved the greatest curse to the whole of the Northwest and Manitoba included, was that of the late M. Oxeart, who located on the south side of the Cypress Hills, where the large bands of horses brought from Montana were ranged. About the years 1891 and 1892, when Oxeart was having his greatest yearly turnover, glanders was prevalent in his band, and hundreds of horses were being shipped or trailed east through Assiniboia into Manitoba to spread the disease. The contagious diseases of animals was being looked after by the local government at that time, so that little was done toward curtailing the spread of or stamping out the outbreak. At that time nearly every case of glanders found in the southern part of Assiniboia was traceable to Oxeart's horses. This band of horses has been dispersed, and although odd cases are occasionally found where they formerly ranged, the country is being so well looked after that there is little danger to be apprehended from that point.



## SESSIONAL PAPER No. 15a

The greatest source of danger we have to contend with now in the matter of glanders is the horses brought from the other side of the line by incoming settlers; this of course it is impossible to check without applying the mallein test to all horses at ports of entry, and as an animal may be affected with glanders for a considerable length of time before any outward symptoms are noticeable, it will be impossible to prevent the admission of all diseased animals without the use of this test. A case came under the notice of one of our inspectors a few months ago, of a settler who before coming to this country purchased eight horses in Chicago from a dealer. These horses were carefully inspected at the boundary, and were passed as they presented absolutely no clinical symptoms. While the inspector was in the district in which the owner of the horses lived he was informed that the horses looked suspicious, and when examined and tested with mallein it was found that six of the number were affected with glanders. These horses had not been in contact with any diseased animal after their arrival in Canada, so that they must have been affected before they were brought here. I mention this case to show the danger confronting us.

A few diseased animals have also found their way in from points further east in the Dominion, brought in principally by farmers from Manitoba and horse dealers who buy in any market. I do not, however, look upon this with any degree of alarm, as the department is putting forth every effort to stamp out this malady in all parts of Canada as well as in the two new provinces.

Glanders and its symptoms appear to be so well known now that little if anything new is left to discover, there are however a couple of points which I think worth mentioning, I have been informed that some old country practitioners claim that a loosening and falling out of hair of the tail and mane was a diagnostic symptom of glanders. I have tried this in over two hundred head that I have tested, some of them far advanced in the disease, and have come to the conclusion that there is nothing in it. Another point which I wish to speak of is the swelling at point of injection when testing, where the swelling pits upon pressure and there is a disinclination on the part of the animal to move its head, I look upon this as a reaction, when such swellings occur, I have invariably found the fore leg on the side the injection was made affected, there is more or less swelling of the whole leg; on the other hand where the swelling is soft and inclined to 'bag' a little at the lower side, where the head and neck is moved freely and there is no lameness, I would hesitate about destroying such an animal on this evidence alone. There is something about an affected animal apart from the swelling and rise in temperature that indicates the disease, *i.e.*, when using the mallein we are now supplied with. There are periods of marked dulness, animals will stop feeding with a wisp of hay in their mouths if in the stable and if disturbed will go on feeding again for a few minutes until they evidently forget what they were doing. I look upon this more as a cerebral affection or intoxication than actual bodily illness, this phenomenon is more marked between the hours of 9 and 11 in the morning than at any other time during the day. The mallein supplied by the Biological laboratory strikes me as being of better quality than any I have ever used of other manufacture, the reaction obtained in affected animals is more prompt and more pronounced and when proper antiseptic measures are taken there is seldom any swelling.

## MALADIE DU COIT.

Notwithstanding the fact that the specific trypanosoma has not been discovered in any animal on this continent, there can be no doubt as to the existence of this disease in Southern Alberta. Repeated careful examinations made during life and careful post mortem examinations prove this disease to be *Maladie du Coit* as they have it in some of the European, Asiatic, and African countries. Post mortem examinations have been made upon practically every animal which has been destroyed on account of this disease, and these examinations have in every case proved the diagnosis made to have been correct while the lesions found have corresponded with those recorded by Lingard and other investigators.



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The insidious nature of this disease and the difficulty of detecting it when at certain stages, stamps it as a very serious menace to the horse breeding interests of the county. There are periods in some cases where I think it would be absolutely impossible for any practitioner to say an animal was affected and yet this animal would be capable of transmitting the disease to other animals. I am inclined to the opinion that the climate of this country is not altogether favourable to the development of the disease, and it is only after a considerable lapse of time that the disease appears to manifest itself. Some of the mares which I examined in March, 1904, were found to be affected although presenting no other symptoms than a vaginal discharge, were last month apparently in good health apart from a barely noticeable lack of co-ordination; these animals are now at the experimental station near Lethbridge where the course of the disease will be watched with considerable interest.

Horse breeders for a long time were inclined to be sceptical about the existence of this disease, even some who saw post mortem examination made and the changes brought about found in different animals pointed out to them, said that they could not see anything different to what would be seen in a healthy animal; lately, however, they have changed their minds and are now asking for a general examination of all mares and stallions in the Lethbridge and Medicine Hat districts, this would, I think, be a move in the right direction as it would give a good idea as to the extent to which the disease has spread and would also afford us the opportunity of disposing of affected animals without waste of time and enable us to ensure control of suspects. I also think that it would be the means of making many owners take their horses in to keep when they are made to understand the danger they are exposed to while running out on the open prairie. What particular part of the continent the first affected animals came from, I have been unable to learn, but I do know that two different lots of mares have been destroyed at the quarantine grounds presenting the usual symptoms of the disease and in which cases the diagnoses were confirmed by post mortem examination. All of these mares, the owners informed me, came from Oregon. I refer to the DeRinzy and Kimball Brothers mares. The Kimball mares I first saw at Lethbridge, when inspecting for shipment, while the DeRinzy mares, I found under similar circumstances at the Macleod stock yards. In the list of brands furnished to Dr. Davison by Benson Brothers, of Union, Oregon, there is one brand, viz.: A, which I found on three of the Kimball Bros. mares. On two of these mares the brand had been vented with a bar over the brand thus: A, while none of the DeRinzy mares have this brand. I found mares out of both bunches branded '3' this latter brand is not mentioned in Dr. Davison's report. I doubt if there is anything to be gained by carrying this investigation further, but would insist upon the strictest examination of mares at ports of entry to be made in daylight only.

#### MANGE.

While occasional cases of mange among horses are reported from different parts of the country, the really serious outbreaks (those in large bands of horses) have been cleaned up, and I think the compulsory dipping order may be in a large measure credited with this result, for had it not been for this order we would not have had the vats to put the horses through, and the work of eradicating the disease from the bands of western horses would have dragged on for years if the treatment had had to be done by hand. Both last year and this large numbers of horses (not infected with mange) were put through the vats on the principle that if it was good for the cattle it certainly would be good for the horses. The cases now under quarantine are principally farm horses, which can be easily looked after and are not a serious menace to other stock.

The compulsory dipping order regarding cattle was again enforced this year, the results being such that there is ground for the hope this drastic measure will not have to be resorted to again for some years at least, and that any cases that may have been overlooked can be attended to without putting the whole country to such expense. The



## SESSIONAL PAPER No. 15a

results of last year's dipping have been most satisfactory. Last winter was one of the severest experienced in years, yet I could not learn of one death from mange on the range, whereas in previous years I doubt if 5 per cent would be an overestimate of the loss.

About 50,000 head of cattle were shipped this season for export, the consensus of opinion being that cattle were never brought to the stock yards in better condition or freer from mange. The work of carrying out the compulsory dipping order has been anything but a pleasant one, but now that it is finished it is gratifying to know that the result looked for has in a great measure been attained; not only have the cattle been freed from the scourge, but the owners have learned the benefits to be derived from dipping and that they have a cheap and effective remedy in the lime and sulphur preparation.

## ANTHRAX.

No cases reported.

## SYMPTOMATIC ANTHRAX OR BLACK LEG.

A few cases of this disease have been brought to my notice. Cattlemen as a rule understand the nature of this malady, and apply whatever treatment they think best, the majority using the Pasteur vaccine.

## RABIES.

During the summer no little alarm was caused by the report that rabies existed in the southeastern part of Saskatchewan, having been introduced by a dog from across the line. Some few were destroyed and a number quarantined. Up to the present time, however, no further cases have been reported. That the trouble was rabies has not been verified.

## TUBERCULOSIS.

Sixty-two cattle were tested, there being no reactors. While there may be an occasional milch cow brought in from the east affected with tuberculosis, I know of no herd in which the disease exists. I never saw a range animal showing any symptom of the disease, wasters being practically unknown among cattle that spend the entire year in the open in the country. This I think would apply to white men living in the country as well as to cattle. In the twenty years I have spent in the west I have only known one stock man to be affected with tuberculosis. Men engaged in this business spend practically their whole time in the open air, and I might add rarely use milk.

I have the honour to be, sir,

Your obedient servant,

JNO. F. BURNETT,

*Inspector.*

C. H. H. SWEETAPPLE, V.S.

ROYAL NORTHWEST MOUNTED POLICE.

FORT SASKATCHEWAN, October 31, 1905.

SIR,—I have the honour to forward the following annual report of services performed for the Department of Agriculture for the year ending 31st October, 1905.



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All classes of stock have been remarkably free from disease and no epidemic of any kind has made its appearance.

Malaria or swamp fever, typhoid fever and typhoid influenza, among horses which prevailed to a considerable extent during the past few years has almost disappeared any hoof disease or perhaps more correctly, cutaneous quittor, has been almost, if not quite unknown.

The abatement of these diseases is, no doubt due to climatic conditions, but I am confident that when horses receive better care and sanitary surroundings are improved, as they no doubt will be, these diseases will be very much less prevalent under any climatic changes that may occur.

Tuberculosis in cattle occurs only to a very limited extent and we may well hope to escape very much from this disease as conditions are most unfavourable for its development.

Actinomycosis, which at one time could be seen in almost every herd of cattle, is most rare at the present time.

Black quarter in young cattle has appeared in a few localities, but the losses have not been at all serious and with proper attention to vaccination in these localities, any serious results will certainly be avoided.

Mange in cattle is comparatively unknown in Northern Alberta, and only a few isolated cases in horses have appeared, and these have yielded readily to treatment.

Abortion on some farms appears quite frequently, sufficiently so to indicate its contagious nature and is confined to a very limited area.

Sheep, though kept only to a very limited extent, have been entirely free from disease.

Swine are not so fortunate, as a number of young pigs die due in almost every case to dietetic errors in not supplying a mixed grain ration which this animal appears to require.

Glanders which has made its appearance so frequently during the past will, I hope very soon be almost, if not quite, exterminated, owing to the liberality with which the Department of Agriculture is compensating owners of animals affected with this disease and the stringent measure taken in regard to animals reacting to the mallein test. 98 animals were subjected to the mallein test and of these 18 reacted but presented no clinical symptoms, and were destroyed. 8 horses and 2 mules were destroyed, presenting clinical symptoms.

I have the honour to be, sir,

Your obedient servant,

C. H. H. SWEETAPPLE,

*Veterinary Staff-Sergt.*

The Veterinary Director General,  
Ottawa.

J. J. MOUNTFORD, V.S.

PRINCE ALBERT, October 31, 1905.

SIR,—I have the honour to forward the following report of the work done by me in this district for the Department of Agriculture for the year ending October 31, 1905.

I have frequently visited the different parts of this district and have destroyed sixty-eight glandered horses, and quite a number of these horses belonged to German settlers who came from Manitoba and have settled in and around Rosthern, Hague and Saskatoon.



## SESSIONAL PAPER No. 15a

There were thirty-three cases of mange in horses in this district during the past year. These were all placed in quarantine and under treatment.

An outbreak of glanders was reported in horses working on the construction of the Prince Albert branch of the Canadian Northern Railway, and on examination, I found them all to be in good health and condition, in all there were three hundred and fifty horses and one hundred and twenty-five mules. I watched these horses very closely while they remained in this district and they continued to keep in good health.

There was another outbreak of glanders reported in the Crooked Lake, Hoodoo and Humbolt districts, and on investigation I found typhoid fever to be the cause of death in most of the cases.

These settlers have just moved into the above districts and had freighted their stuff from Rosthern, a distance of eighty to one hundred miles, and did not feed their horses any oats and were watering them at the different sloughs along the road, and making the round trip in four days. I did not find any trace of glanders, having been in the above districts.

With the exception of the Crooked Lake, Hoodoo and Humbolt districts, I have seen but an odd case of fever in horses in this district during the past year.

A detailed statement of the work done by me here has been forwarded to the department each month.

I have the honour to be, sir,  
Your obedient servant,

The Veterinary Director General,

J. J. MOUNTFORD,  
*Veterinary Staff-Sergeant.*

W. MITCHELL, V.S.

NORTH PORTAL, October 31, 1905.

SIR,—I have the honour, in compliance with your instructions, to forward this, the annual quarantine report for North Portal for the year ending the 31st ulto.

And at the outset, permit me to say that in the performance of this duty, I find myself labouring under grave disadvantages through lack of personal knowledge relative to the matter I am writing about. Indeed, with the exception of the last couple of weeks in the year during which I had personal oversight of the work, for the material necessary for this report I am dependent entirely on the meagre supply furnished by the records, and that almost entirely of a statistical character. Under more favourable circumstances and with the entire scope of a year's operations to draw upon, much doubtless, might have been written that would not have been wholly devoid of interest but in the present instance, apart from the elaboration of merely hear-say knowledge, that course is wholly impracticable. Suffice to say that I have carefully checked the records over and find that the total number of United States stock brought into Canada at this point during the year for all purposes is as follows:—

Horses.. . . .	6,504
Mules.. . . .	311
Cattle.. . . .	6,997
Sheep.. . . .	92
Swine.. . . .	48

I have the honour to be, sir,  
Your obedient servant,

The Veterinary Director General,

W. MITCHELL,  
*Veterinary Staff-Sergeant.*



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H. M. GRAY, M.D.V.

REGINA, October 31, 1905.

SIR,—I have the honour to forward herewith my yearly report for the year ending October 31, 1905.

I was stationed at Pendant D'Oreille inspecting stock crossing the line at that port of entry, leaving that point on December 15, to relieve Staff-Sergeant Johnston at Coutts, where I was stationed until February 1, being transferred from 'K' division to Depot division on June 1, 1905.

I was stationed at North Portal from June 18 until October 17, since when I have been working from Regina testing animals for glanders.

I have the honour to be, sir,

Your obedient servant,

H. M. GRAY,

*Veterinary Staff-Sergeant.*

The Veterinary Director General,  
Ottawa.

A. E. DENNIS, V.S.

REGINA, October 31, 1905.

SIR,—I have the honour to forward the annual report on quarantine work done in this district; since entering the service about five months ago I have been working in this district on glanders; I have tested about 190 horses and examined quite a number more which I did not test owing to no clinical symptoms being present and failure to trace where they had been in contact with infected animals. But of the animals I have tested myself the second time, I only found one that did not react again; in nearly all of the cases where animals were infected I have traced the disease either to a ranch or the United States. I was at Tyvan on the Arcola and Regina Railway and destroyed twenty-five horses around that town and traced the origin of the disease to three different parts of the United States. I have found very little mange in this district and what I did find was not very far advanced and yielded readily to treatment.

I have the honour to be, sir,

Your obedient servant,

A. E. DENNIS,

*Veterinary Staff-Sergeant.*

The Veterinary Director General,  
Ottawa.

E. A. MEAKINGS, M.D.V.

BATTLEFORD, October 31, 1905.

SIR,—I have the honour to submit this the annual quarantine report of this district for the year ended October 31.



## SESSIONAL PAPER No. 15a

## GLANDERS.

Since the date of sending in last annual report till the end of February, I was stationed in Regina district, endeavouring with several other inspectors to stamp out the serious outbreak of glanders prevailing there at that time. I am pleased to state that our work is now facilitated by the owners of affected animals receiving compensation for those shot.

I also found that settlers were much more willing to have their horses tested, and in cases where horses had been exposed the owners instead of spreading the disease would report at once not waiting until pronounced clinical symptoms appeared.

It is quite evident that the work has been greatly lessened by destroying reactors as very few of the owners keep their animals for a retest.

## MANGE.

There was only one case of mange reported to me in this district and that was doing well at the time of leaving for Battleford.

The statistics of above work done by me in Regina district will be shown under that heading.

## GLANDERS.

In Battleford district I found considerable contagious disease chief of which was glanders. This disease existed at Bresaylor and a case or two north of Battleford. At the latter place all diseased animals were destroyed, at Bresaylor some were destroyed and others were ordered to be collected pending testing. At this time a serious outbreak occurred at the Canadian Northern Railway construction camps, this matter was investigated and all animals showing clinical symptoms were destroyed together with a number of animals which reacted to the mallein test.

Later the owners of these animals decided to quarantine those affected instead of destroying. These quarantined animals were visited from time to time and were found properly isolated thereby preventing the spread of the disease. All abandoned camps were burned, and a number of carcasses of horses and mules which I suspected of dying of said disease and which were lying along the trail unburied. Since knowing the nature of the disease the superintendents of various camps have attended to the burning of the camps before leaving, previous to that time the expense of burning said camp was borne by the Department of Agriculture as it was impossible to ascertain the names of the contractors who used these camps, owing to many of them having left the district.

Numerous settlers worked on the grade teaming during this outbreak the names being given to me by the superintendents of construction. All these horses have been tested with one or two exceptions, and I have great pleasure in stating that a very small majority of these horses have reacted to the mallein test.

With the exception of horses and mules under quarantine and those in the Bresaylor district at which place H. Ovens, V.S., is now working, I know of no other cases in this district.

## MANGE.

During the spring a few cases of mange appeared in cattle these being confined to the Battleford town herd, those showing disease were promptly isolated, and a close watch kept on the others, none of which developed the disease, and all cases, I am glad to say, have been successfully treated. In horses this disease is somewhat more scattered, cases being found in various parts of the district; however, most of these are now cured and the others progressing favourably. And in only one case was it found in a band of horses and these were in pasture, all were quarantined and are now being treated.



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I have visited some of the ranches in this district as well as a number of bunches of horses which have been in this vicinity and found no disease of any kind, the horses being in a fine healthy condition.

I attach a chart of number of animals tested, destroyed, &c.

I have the honour to be, sir,  
Your obedient servant,  
E. A. MEAKINGS,  
*Veterinary Staff-Sergeant.*

The Veterinary Director General,  
Ottawa.

Horses tested, reacted, destroyed and quarantined:

Tested.. . . . .	262
Reacted.... . . . .	103
Destroyed.... . . . .	54
Quarantined.. . . . .	55

J. E. LITTLEHALES, D.V.S.

MAPLE CREEK, October 31, 1905.

SIR,—I have the honour to submit the following report, for year ended October 31, on work performed for the Department of Agriculture since April 1, at which time I was transferred here.

Number of miles travelled—

Train.. . . . .	1,624
Trail.. . . . .	1,275

Number of animals inspected—

Imports—

Horses.... . . . .	442
Cattle.... . . . .	3,333
Sheep.... . . . .	3,070

Exports and local markets—

Cattle.... . . . .	4,781
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About twenty-five head were rejected on account of mange.

These exports were inspected at different points between Medicine Hat and Waldeck.

Local markets—

Horses.. . . . .	81
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These were inspected by me at Medicine Hat, Walsh and Irvine in the absence of Dr. Hargrave.

The above record shows an increase on imports and exports from last year.

The following exports were inspected by Dr. Jemison at Medicine Hat, Dunmore Junction, Irvine, Walsh, Brooks, Suffield and Stair:—

Cattle.... . . . .	12,187
Horses.... . . . .	393
Sheep.... . . . .	1,262
Mules.... . . . .	4



## SESSIONAL PAPER No. 15a

Dr. Jemison was temporarily and especially engaged, from August 1, for the purpose of inspecting shipments of live stock, at various points on the railway, between Brooks and Waldeck, as there was so much other work to be done in the country, by the inspectors stationed at Medicine Hat and Maple Creek.

## GLANDERS.

I have destroyed ten horses which showed clinical symptoms, and tested forty-five head with mallein, three of which reacted and were destroyed.

I still have a bunch of horses to retest, as soon as the owner is able to gentle them sufficiently to be handled.

The districts in which glanders prevailed, are Herbert, among the German farmer's horses, and Battle Creek.

Some half-breeds, travelling from Saskatoon by trail to Swift Current were stopped and quarantined by the police as their horses showed suspicious symptoms; three horses I destroyed showing clinical symptoms, and after testing the balance, eight in number, destroyed one reactor.

## MANGE.

There has been very little mange showing this year, only a very few cases were noticed in the cattle treated in this district.

The majority of the ranchers recognize the benefit they have derived from last year's treatment

Dipping operations are practically over, nearly 60,000 head of cattle being dipped in this district. It was found necessary to employ several more deputy inspectors than was at first expected, at the commencement of the dipping, on account of there being so many more vats to attend to than last year, and also so many ranchers dipped on the same dates, as it was in two cases at second dippings, it was found impossible to provide a deputy inspector. However, dipping operations were very thorough, hardly an animal being missed. The cage vat does the work most thoroughly.

There were no cases of mange in horses reported to me in this district.

## MALADIE DU COIT.

So far this disease has not extended to this district. One case was reported, as suspicious, in a gelding at Battle Creek. I saw this animal with Dr. Hargrave, and it proved to be free from the disease.

No disease in sheep has been reported to me during the time I have been in Maple Creek.

I have the honour to be, sir,

Your obedient servant,

J. E. LITTLEHALES,

*Veterinary Staff-Sergeant.*

The Veterinary Director General,  
Ottawa.

H. T. AYRE, V.S.

REGINA, October 31, 1905.

SIR,—I have the honour to submit the following report of quarantine work performed in the Regina district by Inspector Burnett, Staff-Sergeants Ayre, Mitchell,



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Busselle, Greenwood, Meakings, Gray and Dennis, between November 1, 1904, and October 31, 1905 .

Tested and quar- antined.	Tested and des- troyed.	Destroyed with- out test.	Tested and no reaction.	Examined only and not tested or quarantined.	Tested more than once and ceased to react.						Total.
					1	2	3	4	5	6	
114	631	22	1,190	1,196	.....	67	31	18	2	4	3,275
Horses quarantined for mange.....											86
Cattle " " .....											41

Cattle tested for tuberculosis, 69; 62 for the experimental farm, Indian Head, and seven for Jno. Scott, Manor, no reaction.  
Nine head of cattle died from Blackleg at Willow Bunch, 147 head examined.

I have the honour to be, sir,  
Your obedient servant,  
H. T. AYRE,  
*Veterinary Staff-Sergeant.*

The Veterinary Director General,  
Ottawa.

A. R. DOUGLAS, D.V.S.

MACLEOD, October 31, 1905.

SIR,—I have the honour to submit herewith my first annual report of services per-  
formed for the Department of Agriculture.  
Having been taken on as veterinary staff-sergeant in the R.N.W.M. Police early  
in March, 1905, I was employed for a considerable length of time investigating cases  
reported as glanders among the horses in that district. On the Kirkella branch of the  
C.P.R. the general condition of stock was good, although about eight horses in the  
neighbourhood of Tantallon were found to be suffering from glanders and were forth-  
with slaughtered. On the main line east of Regina several cases of suspected glanders  
were reported, but no serious outbreak occurred. On the Arcola branch, eight horses  
were slaughtered for glanders at Kronan and two at Frances, in both cases these were  
reactors to the third test with mallein. At Bladworth, on the Prince Albert branch,  
six horses out of seven on the premises of a farmer in that neighbourhood were found  
to be infected with glanders and were forthwith destroyed; I also inspected the prem-  
ises of several farmers residing near Davidson, where an outbreak of glanders had  
occurred some time previously, the disinfection of premises and cremation of carcasses  
had been carried out thoroughly, so that no fresh cases, up to that time, had been  
reported. At Craik a case of mange was reported, but upon examination proved to  
be a simple case of cutaneous irritation, the result of pediculi. Several other cases  
of suspected glanders were reported, but the majority of these proved to be nothing  
more serious than a severe attack of nasal catarrh or coryza, and especially was this  
found to be the case among horses imported from the east, the change of climate pre-  
disposing them to such nasal affections.



## SESSIONAL PAPER No. 15a

On the main line west of Regina several cases of glanders occurred; ten miles north of Belle Plaine two well marked cases developed and on testing with mallein the remainder of the horses on the premises, four in number, a reaction occurred in each case, so that the entire six were destroyed.

At Buffalo Lake, twenty miles north of Moosejaw, six cases of glanders were discovered just in time to prevent a serious outbreak in that district.

In the neighbourhood of Caron a great number of suspected cases were examined but in only two cases did the disease prove to be glanders.

At Parkbeg seven cases of glanders occurred and several cases of suspected mange were reported, but upon investigation these cases proved to be ringworm, with which a number of calves in that district were badly infected. North of Parkbeg, two cases of glanders occurred; two cases were also discovered at Eyebrow Hill, about thirty miles north of Parkbeg. West of Parkbeg, seventy range horses were tested with mallein owing to the fact that they had been exposed to contagion by direct contact with a glandered horse on the same range; four of these reacted and were destroyed. About forty miles north of Chaplin, a very serious outbreak of glanders occurred; to all appearances the disease had been spreading amongst these horses for at least a year, but owing to the natural conditions under which these animals live being conducive to good health, it assumed a benign form, hence the characteristic symptoms were slowly developed and in the majority of cases the animal was, to all appearances, perfectly healthy until tested with mallein, when a decided reaction occurred, thus the disease would be disseminated among the farming community should these animals be offered for sale as the extreme change from the open range to a dark, damp or ill-ventilated stable would suffice to render the disease manifest in a short period of time. It appears then, that a careful examination of range horses from that particular district would be necessary before placing them on the market. Out of about 200 head of horses tested with mallein on this ranch, 56 reacted and were disposed of in the usual manner. At Waldeck I inspected six carloads of cattle for shipment, all of which passed inspection. On the Soo line the condition of stock was found to be good, although several suspected cases of glanders were reported from various points along this line no outbreak of any consequence occurred. Towards the latter part of May I inspected 632 Texas cattle and 74 horses for importation into Canada; owing to some alterations to the stock yards at North Portal I was obliged to proceed to Velva, North Dakota, to examine these animals.

Early in September I was attached to this division for the purpose of taking over the duties of inspector for No. 2 quarantine district. Compulsory dipping of cattle for mange is still in progress in this district and with few exceptions the ranchers are not adverse to this method of treatment, in fact some claim that the cattle winter better after having been dipped, however, it has checked the spread of mange to an enormous extent and a thorough dipping this year will practically exterminate the disease in this district. At Cardston I inspected 22 head of horses for shipment during the latter part of October. At present I have two mares under close quarantine for suspected *maladie du coît*; until a thorough examination can be made, these mares are in the neighbourhood of Cardston.

I have the honour to be, sir,  
Your obedient servant,

A. R. DOUGLAS.

*Veterinary Staff Sgt.*

The Veterinary Director General,  
Ottawa.



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C. H. McVEIGH, V.S.

CALGARY, October 31, 1905.

SIR,—I have the honour to submit herewith my annual report of work done for the Department of Agriculture for the year ending October 31, 1905.

Cattle mange, which has been prevalent throughout this district, has been nearly eradicated by the recent compulsory mange dipping order. This district has been subdivided into three districts.

District No. 12.—That portion of the Calgary district lying west of the C. and E. railway, under the supervision of P. K. Walters, V.S.

District No. 10.—That portion of the district, west of the C. and E. railway and north of the C.P.R., under the supervision of Veterinary Staff-Sergeant Busselle.

District No. 11.—That portion of the district east of the C. and E. railway and south of the C.P.R., under the supervision of Veterinary Staff-Sergeant McVeigh.

I am pleased to state mange has not been nearly so noticeable this season as last, and also to state the dipping has been much more thoroughly carried out.

I do not believe there is a single animal in these districts which will not be treated this season. Not a single case of horse mange has come under my notice this year.

Glanders has been found to some extent throughout the district north of Calgary. Sixty-three animals have been destroyed, only three south of Calgary.

Most of the stock inspected for shipment were inspected by Drs. Hobbs and Riddell: Horses, 1,937; cattle 19,858.

I have the honour to be, sir,

Your obedient servant,

C. H. McVEIGH,

*Veterinary Staff Sgt.*

The Veterinary Director General,  
Ottawa.

J. A. McCREIGHT, V.S.

R.N.W.M. POLICE,

MACLEOD, October 31, 1905.

SIR,—I have the honour to forward the following report of services performed for the Department of Agriculture for the year ending October 31, 1905.

I was transferred from Depot division, Regina, to this post in May last. My report prior to that date has been taken from records kept in the veterinary office.

Every shipment of stock during the year was inspected.

Number of cattle inspected and passed for shipment, 10,692 head.

Number of horses inspected and passed for shipment, 2,246 head.

Number of cattle rejected for mange, 4 head.

Number of cattle rejected for actinomycosis, 1 head.

Number of horses rejected for mange, nil.

MALADIE DU COIT.

Owing to the insidious nature of this disease and the difficulty in detecting its symptoms by the ordinary horse owner, I was employed chiefly during the summer in making examinations of stallions kept for service in this district, with a view to prevent further spread of the disease. In every case where the disease was suspected to



## SESSIONAL PAPER No. 15a

exist, a careful examination was made of all in contact animals and everything showing the slightest symptoms quarantined and isolated.

Number of stallions and mares examined, 304; number of stallions quarantined, 2; number of mares quarantined, 5.

Mange has not shown to any great extent so far in this district, nor have I seen, with the exception of one, a bad case of actinomycosis.

*Glanders.*—Twelve outbreaks of this disease were investigated, and measures carried out as seemed best for its eradication and control.

Number of animals destroyed for glanders, 23; number of animals tested and no reaction, 17; number of animals quarantined, 1; total 41.

I have the honour to be, sir,

Your obedient servant,

JAMES A. McCREIGHT,  
*Sergt.*

The Veterinary Director General,  
Ottawa.

N. P. OLSEN, V.S.

REGINA, October 31, 1905.

SIR,—I have the honour to submit the following report of work performed by myself for the Department of Agriculture from May 17 to October 31, 1905.

During the first three months of this period I was working in southeastern Assiniboia (now Saskatchewan). I found glanders to be by far the most prevalent of contagious diseases in this district. The attached table shows my work in this connection.

#### RABIES.

An outbreak of this occurred in Oxbow, and such measures were taken as were in accordance with the Animals Contagious Diseases Act.

#### EQUINE MANGE.

Only seven cases of this came under my notice.

#### CATTLE MANGE.

No cases of this disease were reported in this locality.

During September and October, I had charge of Dipping District No. 13. The Order in Council *re* compulsory dipping has been complied with in a satisfactory manner in this district.

Six dipping vats have been built since last year; there being now eleven vats in the district. No cases of mange were seen in the northern part of the district, but in the southern and central portions cases were quite numerous, particularly in herds not treated last year. No other diseases of a contagious or infectious nature came under my notice.

I have the honour to be, sir,

Your obedient servant,

N. P. OLSEN,  
*Veterinary Staff Sgt.*



GLANDERS.

Tested and Quaran- tined.	Tested and Des- troyed.	Des- troyed. without testing.	Tested and no re- action.	Examin- ed only, not tested or quaran- tined.	Tested more than once and ceased to re-act.					Total.
					1	2	3	4	5	
28	53	0	138	43	.....	7	1	.....	.....	270

H. J. JOHNSTON, V.S.

Coutts, October 31, 1905.

SIR,—I have the honour to submit this my annual report of work done for the Department of Agriculture for the year ending October 31, 1905.

With the exception of a very few cases of mange in cattle, no disease of a contagious or infectious nature, has shown itself in this district during the year.

Mange is practically eradicated in this district owing no doubt to the rigid enforcement of the compulsory dipping order, and every rancher seems anxious to comply with it, although some of them have been rather late in doing so.

There has been a marked decrease in the amount of stock imported as compared with that of last year, owing to the fact that the unbroken range horses are not being shipped and the dry seasons for the last two years in Southern Alberta have discouraged immigration.

During the year I tested with tuberculin thirty-nine head of cattle, none of which reacted.

The total number of stock that came into Canada at this port is as follows:—

Horses.. . . . .	2,584
Mules.. . . . .	6
Cattle.. . . . .	3,940
Sheep.. . . . .	4,473
Swine.. . . . .	.....
Total exports, cattle.. . . . .	409

We completed the dipping of all cattle in the vicinity of Coutts the second time on the 25th of October. I have not received the reports of the deputy inspectors of this district (No. 14) to date, so cannot give a complete detail of the work done.

I have the honour to be, sir,  
Your obedient servant,

H. J. JOHNSTON,  
*Veterinary Staff Sgt.*

The Veterinary Director General,  
Ottawa.



SESSIONAL PAPER No. 15a

S. A. K. WHITE, V.S.

CARDSTON, October 31st, 1906.

SIR,—I have the honour to forward this my annual report of work done for the Department of Agriculture for the year ending October 31, 1905.

I relieved S. S. Oliver at this quarantine station on July 29, 1905, since that date there have been inspected here two hundred and fifty-four horses, and thirty-six head of cattle. The cattle were held, and dipped.

There were one hundred and forty-two horses inspected free of duty, being entered by settlers. And one hundred and two entered upon which inspection fees were collected.

I have examined, and tested for glanders, in this district, fourteen head of horses, one of which reacted, and was destroyed.

One case of *maladie du coït* came to my notice and is now held in quarantine.

Mange is practically stamped out in this district due to the active measures taken by the Department of Agriculture, in enforcing the dipping of all cattle, which is now declared to be very beneficial to all cattle whether affected or not.

I have the honour to be, sir,  
Your obedient servant,

S. A. K. WHITE,  
*Veterinary Staff Sgt.*

The Veterinary Director General,  
Ottawa.

E. S. GREENWOOD, V.S.

PENDANT D'OREILLE, October 31, 1905.

SIR,—I have the honour to submit herewith my report of work performed for the Department of Agriculture for the seven months ending October 31, 1905.

On engaging with the Royal Northwest Mounted Police as a veterinary staff sergeant in April, 1905, I was stationed at Depot Division, Regina, where I remained until June, when I was transferred to K Division, Lethbridge, and stationed at Pendant d'Oreille, a port of entry on the international boundary.

While stationed at Depot Division I was sent out to investigate an outbreak of glanders on the Indian reserves, in the Touchwood Hills Indian agency. I found this to be quite a serious outbreak, not confined to horses on the Indian reserves but extending to those of several settlers in the vicinity. In all I found twenty-six cases of glanders, fourteen of which were on the Indian reserves. All those horses were dealt with according to the order. As those Indians are in the habit of spending a great portion of their time in pursuit of game and in visiting the different reserves, thus coming in contact with horses all over that country, I was unable to trace the origin of the outbreak.

While inspecting horses on one of the reserves, I came across two cases of mange in horses; these were treated according to the order. The dipping of horses for the eradication of this disease has had a marked effect on the horses of our western ranges.

Since coming to Pendant d'Oreille I have had one case of glanders. This horse was destroyed according to the order, and the remainder of the herd subjected to the mallein test.

When the compulsory dipping order of 1905 came out, I was given charge of district No. 6. In this district we have six dipping plants, besides the government vat



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at Pendant d'Oreille. All the cattle in the district, about 27,000, have been treated according to the order, with the exception of those being dipped at this dipping plant. Two of the largest cattle owners in the district have been using this plant, and having to cover such a large tract of country in order to get their cattle, they have been unable to complete their dipping in the time specified by the order. They are, however, continuing to dip, and hope to have all their cattle dipped by November 15, 1905.

The compulsory dipping order of 1904 has had an appreciable effect on the eradication of this disease, and with this season's compulsory dipping will, I think, leave our herds entirely free from mange, and with the present regulations regarding import cattle at all ports of entry, and with something done to effectually prevent the invasion of our ranges by the American stray cattle, I think we will be free from this troublesome disease for some time.

While visiting the different dipping plants in my district I have noticed several cases of actinomycosis. Aside from this disease, and mange, cattle in this district are free from any contagious diseases. Attached is a list of stock inspected at this port of entry, and allowed to enter, from June 1, 1905, to October 31, 1905.

Import stock inspected at Pendant d'Oreille port of entry and allowed to enter:—

Horses.. . . . .	656
Cattle.. . . . .	899

Registered cattle tested with tuberculin and allowed to enter, 14.

Export cattle inspected and allowed to be removed from quarantine district, 2,627.

I have the honour to be, sir,  
Your obedient servant,  
E. S. GREENWOOD,  
*Veterinary Staff Sgt.*

The Veterinary Director General,  
Ottawa.

M. V. GALLIVAN, V.S.

LETHBRIDGE, ALTA., October 31, 1905.

SIR,—I have the honour to submit this my annual report of work done for the Department of Agriculture for year ended October 31, 1905.

During the past twelve months I have inspected for shipment 4,332 cattle and 314 horses, and have found no contagious diseases existing among cattle, with the exception of a few cases of mange and actinomycosis.

Mange is disappearing rapidly since the enforcement of the compulsory dipping order.

The equine disease known as *maladie du coit* still exists in this district, but every means possible is being used to eradicate it. Early in June an examination of the mares at the quarantine station was conducted by you, Inspector Burnett, Dr. Higgins, Dr. Warnock and myself also being present. A number of mares belonging to different owners were destroyed, while several selected cases were retained for experimental purposes. A considerable number were subjected to a further period of quarantine owing to the symptoms presented not furnishing conclusive evidence of their being affected. Since that time a number of other mares have been slaughtered after examination by Inspector Burnett, Dr. Hadwen and myself.

Dr. Higgins made post mortem examination on carcasses of animals slaughtered in June; Dr. Hadwen doing likewise on animals destroyed this fall. The pathological lesions found will be reported by them.



## SESSIONAL PAPER No. 15a

About thirty-six mares are still in quarantine field, some of which are yet to be destroyed. In the past two months I have seen three new cases, one a stallion, the other two cases are mares picked up on the prairie; these animals have been quarantined on premises of owners. One outbreak of glanders has been reported in this district, which I attended to. It occurred on a farm near Sterling, Alta., two horses were destroyed, one a gray gelding showing clinical symptoms, the other a brown mare that re-acted to mallein test. Since the slaughter of these animals the disinfecting of premises has been satisfactorily carried out.

Six thousand four hundred and seventy-two cattle have been dipped in this district under the provisions of the compulsory order.

I have the honour to be, sir,  
Your obedient servant,

The Veterinary Director General,  
Ottawa.

M. V. GALLIVAN,  
*Veterinary Staff Sgt.*

J. C. HARGRAVE, D.V.S.

MEDICINE HAT, October 31, 1905.

SIR,—I have the honour to submit the following report for the twelve months ending October 31, 1905.

The number and classes of animals inspected and passed for shipment are as follows:—

Horses.. . . .	1,413
Cattle.. . . .	1,948

Since July the inspection of shipments has been looked after by Dr. Jemison.

The number and classes of animals imported from the United States are here given:—

Horses.. . . .	45
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During the year 350 doses blacklegine have been sold.

## GLANDERS.

Number of horses destroyed for glanders during the year were forty-four (44), and for the previous years as follows:—

1901.. . . .	43 head.
1902.. . . .	21 "
1903.. . . .	10 "
1904.. . . .	11 "

Some 230 tests were made during the year.

Horses tested once.. . . .	203
" twice.. . . .	21
" thrice.. . . .	1
Horses tested and no re-action.. . . .	163
Horses tested and destroyed.. . . .	40
Horses destroyed without testing.. . . .	4
Number of ceased re-actors .. . . .	2
Suspicious cases examined.. . . .	20
Number in quarantine at present awaiting test.. . . .	1



TUBERCULOSIS.

Only two cases came to my notice, both were dairy cows, and clinically diagnosed.

MANGE.

The result of the compulsory dipping of cattle in 1904 was most gratifying. The following may serve to illustrate the results.

R. E. Margeson, manager of the Medicine Hat Ranch Co., during the winter of 1903-4 treated in the neighbourhood of 300 cases, and during the winter of 1904-5 did not have a single case. Likewise the ranchers on Boxelder creek treated, during the winter of 1903-04 about 450 cases, and last winter only 3 cases were found, and these were thought to have escaped the dipping.

Similar reports were made from all over the district.

The dipping this year has been done most willingly and, although a few have to make their second dip, is practically finished.

Number of vats in operation during 1905.. . . .	38
Number of cattle dipped.. . . .	60,000
Number of horses dipped.. . . .	2,426

Mange among horses has been almost stamped out. This date a year ago there were in quarantine 8 bunches, comprising some 2,500 head. This date I am pleased to be able to report that only two (2) remain in quarantine, and one of these two herds is free from mange, but remains in quarantine because of the maladie du coit.

At the present time to my knowledge there are only four cases of mange in the district.

The lime and sulphur dip has been used on all these herds.

A quantity of crude oil was received for experiment. Only one test was made. A roan gelding badly affected with sarcoptic mange received one application of this oil, with the result that no further treatment was necessary, but considerable œdema of the extremities resulting from the application.

MALADIE DU COIT.

In March a case of maladie du coit was detected, and several more on April 6, since when about 2,500 mares have been examined.

Number destroyed for maladie du coit.. . . .	104
Number suspicious cases this date.. . . .	86

A number of these herds have been examined two and three times. Post mortems were held on some 75 head.

All efforts towards tracing the disease to its origin have been without results, but from the location of the herds in which it was found and from the fact that a large number of strays are always to be found between here and Lethbridge, it is quite evident that it has spread from the Lethbridge district.

Respectfully submitted.

I have the honour to be, sir,

Your obedient servant,

J. C. HARGRAVE,  
*Inspector.*

The Veterinary Director General,  
Ottawa.



SESSIONAL PAPER No. 15a

D. WARNOCK, M.R.C.V.S.

PINCHER CREEK, October 31, 1905.

SIR,—I have the honour herewith to submit my report relative to inspection work done by me, in Southern Alberta, from January 1, 1905, to October 31, 1905.

During the past nine months my time has been largely devoted to examination and investigation in connection with *maladie du coït* among horses.

In accordance with instructions received from the commissioner, R.N.W.M. Police, during the months of March and April, I examined as many stallions as was possible, but found none of these affected with *maladie du coït*.

Early in May I met you and the commissioner of police at Lethbridge, and visited the quarantine station at that point. Later in the month you, Inspector Burnett, Dr. Higgins, Dr. Hargrave and others, accompanied me to the Porcupine Hills to examine some cases of *maladie du coït*. While there we destroyed two typical cases of this disease, a mare, and a stallion, quarantined by me in October, 1904, the source of contagion being directly traceable to a mare brought in from Utah, U.S. A few days later, I met Inspector Burnett, Dr. Higgins and Staff Sergt. Gallivan, V.S., at Lethbridge, and we began a systematic examination of all mares held at the quarantine station. On the 23rd, you joined us there, and, after examination had been completed the work of valuing and destroying affected mares was proceeded with. On the 31st May, I completed the work of destroying one hundred and ten (110) mares, and with Dr. Higgins, took over twenty (20) affected mares, from Mr. T. McCaugherty, for your department, these to be retained at the Lethbridge quarantine station for experimental purposes. At the same time a number of suspect mares were handed over to their owners, on licenses to be held for future examination.

After consultation with you and Inspector Burnett, I was authorized to employ range-riders for the infected districts, their duties being to see that the regulations relating to *maladie du coït* were being observed by horse owners and to take up all stray stallions found running at large. For this purpose two men were employed, one in the Lethbridge and Little Bow district, and one in the Porcupine Hills and Macleod district, and much good work was done by these men. The attention of horse owners was drawn to the regulations (many were ignorant, or professed to be ignorant regarding these regulations), and many stallions running at large, were taken up and either castrated, or kept under control, thereby minimizing the danger of disease being spread.

About the beginning of June I proceeded to High River district, to examine a large bunch of mares and four stallions, suspected of being affected with *maladie du coït*. In this bunch I found two stallions, and a number of dry mares, showing very suspicious symptoms, but, as many mares were heavy with foal, or had recently foaled, I considered it necessary to examine the herd later in the season before giving a decided opinion, so, quarantined the bunch for future examination. Unfortunately, a few days later, in the course of my inspection duties, I had the misfortune to have my left ankle badly fractured, and knee partially dislocated from the effects of which accident I was physically incapacitated for some months, and have not yet completely recovered; and lost much valuable time.

On the 5th October, I investigated an outbreak of contagious disease among livery horses at Cowley, Alberta, and found the disease to be *variola equina*. Finding four horses affected, I had these isolated, the stable thoroughly cleansed, and disinfected, and no fresh cases developed. Two of the stable attendants became inoculated and suffered considerable inconvenience. I then went to High River, in company with Dr. Hadwen, of Lethbridge, and arriving there met Dr. Walters, of Okotoks. when we visited the ranch already referred to, and made a thorough examination of one hundred and eighty-seven (187) mares, and three stallions—subsequent to my previous visit in June one range stallion had been castrated. As the result of our examination we found thirty-six (36) mares, and one stallion, undoubtedly affected with *maladie du coït*, which animals I valued and destroyed. As this herd is badly



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contaminated, the remaining mares and stallions are under surveillance, and will be dealt with, from time to time, as the symptoms of disease develop.

Up till the 31st of October, I have valued, and destroyed one hundred and forty-seven mares (147), and (3) stallions, representing the brands of thirty-one individual owners, while a number of suspected stallions have been castrated by their owners. Many mares, and some stallions, died before the true nature of the disease was suspected by owners, or the existence of disease was reported.

A number of the mares destroyed have been of little value, but, on the other hand, many have been very valuable animals, and, even when the maximum valuation allowable has been given, the owners suffered heavy loss.

As the effects of this disease are, in many cases, largely manifested in the nervous system, autopsies are often unsatisfactory to owners. Although the lesions found are convincing to the student of pathology, owners are often not impressed with the result of post mortem examinations.

Owing to the insidious nature of *maladie du coït*, it is a difficult disease to control, and stamp out, even among domesticated animals, but, under range conditions the difficulties of eradication are many times increased, and entail much painstaking careful investigation.

In connection with this disease I think it is of the utmost importance that those entrusted with the duty of dealing with it should exercise the greatest care in diagnosis. Mares and stallions affected with other diseases sometimes exhibit symptoms very similar to those of *maladie du coït*, and, in dealing with suspected cases, much careful investigation may be required in order to differentiate. Where pathognomonic symptoms are not present, but, the symptoms presented are sufficiently definite to justify destruction of the animal, I think it is absolutely necessary that autopsies be made. A careful examination after death may reveal the existence of other contagious disease (or perhaps non-contagious disease sufficient to account for the symptoms), to combat the spread of which, measures altogether different from those required in *maladie du coït* may be necessary. By making thorough post mortems in obscure cases, much valuable data may be acquired of great assistance in future investigation. For example, if a mare is exhibiting symptoms suspicious of *maladie du coït*, but the stallion by which she was served, say, the previous year, is found to be in perfect health, and all mares served by him, subsequently are healthy, I think it is important that the true nature of the affected mare's disease should be discovered—after destruction, if the symptoms are such as to warrant this. Under the conditions existing here, I think it is less regrettable that a healthy (not affected with *maladie du coït*) mare should occasionally be destroyed than that one affected mare should be allowed to escape.

By making postmortems the inspector dealing with the case will become possessed of valuable information, and, if the disease does not prove to be *Maladie du coït*, owners of other animals concerned, will be left in a much less perturbed state of mind.

I have the honour to be, sir,  
Your obedient servant,

The Veterinary Director General,  
Ottawa.

D. WARNOCK,  
*Inspector.*

SEYMOUR HADWEN, D.V.S.

LETHBRIDGE, October 31, 1905.

SIR,—I have the honour to submit to you my annual report for the year ending October 31, 1905.

On August 16 I was transferred from Nelson, B.C., where I was stationed, to Lethbridge, Alberta, to take charge of an experimental station then in course of erection, for the purpose of investigating the disease known as *maladie du coït*.



SESSIONAL PAPER No. 15a

The following lists show the number of animals inspected by me at the ports of Nelson and Rossland, also the contagious diseases dealt with, the number of animals tested, and the fees collected during the year.

Animals imported from the United States from October 31, 1904, to May 16, 1905:

Horses.. . . .	718
Mules.. . . .	14
Cattle.. . . .	1,268
Sheep.. . . .	3,084
Swine.. . . .	119
<hr/>	
Total.. . . .	5,203

Number of cattle tested, 37. Found diseased and returned, 2. One mare held on suspicion of maladie du coït, subsequently returned.

CONTAGIOUS DISEASES DEALT WITH IN WEST KOOTENAY.

Tuberculosis.—Two cows were tested, one of which reacted and was destroyed.  
Glanders.—In January at Pendant d’Oreille I destroyed a horse showing clinical symptoms of glanders.  
In June there was another outbreak of glanders at Pendant d’Oreille, three horses were tested and a re-action obtained from them all; these were also destroyed.

AT LETHBRIDGE EXPERIMENTAL STATION.

Since my arrival here my time has been principally occupied in visiting the diseased herds of animals suffering from maladie du coït, and in taking notes upon those reserved for experimental purposes. I have not been able to conduct many experiments as yet, the stabling accommodation at the station not being completed. I have made a considerable number of autopsies, on which I am sending you a separate report.  
In conclusion I desire to express my thanks to Drs. Burnett, Warnock and Gallivan, who have given me all the assistance and information which it lay in their power to do.

I have the honour to be, sir,  
Your obedient servant,

The Veterinary Director General,  
Ottawa.

SEYMOUR HADWEN,  
Inspector.

G. W. JEMISON, V.S.

MEDICINE HAT, October 31, 1905.

SIR,—I have the honour to submit the following report:—  
I inspected for shipment, commencing August 8, and continuing until November 4.

Cattle.. . . .	12,424
Sheep.. . . .	1,262
Horses.. . . .	433
Mules.. . . .	14

I have the honour to be, sir,  
Your obedient servant,

The Veterinary Director General,  
Ottawa.

G. W. JEMISON,  
Inspector.



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S. F. TOLMIE, V.S.

VICTORIA, B.C., October 31, 1905.

SIR,—I beg to submit a report for the year ending October 31, 1905.

Hog cholera was dealt with on one farm near Nanaimo in November last, this was the fag end of the outbreak which caused us considerable trouble in Mountain and adjacent districts during the summer of 1904.

The disease showed itself in Saanich district to a limited extent, but was quickly stamped out, and has not been reported since.

It is gratifying to note that the disease has not been reported in a single district in this province this year where it existed during the summer of 1904 and was dealt with in accordance with the regulations.

Under your directions I had plans prepared, and superintended the erection of corrals, dipping vats, squeezers, etc., at Gateway, Nelson and Midway, B.C., and was ably assisted in this work by Drs. Seymour Hadwen and D. Tamblyn and Mr. J. D. Gordon, collector of customs at Gateway. These corrals are very complete, and were designed with a view to durability, convenience in handling, and the comfort of the stock. The largest was built at Gateway, on the line of the Great Northern Railway. It has two main yards besides smaller compartments, and is equipped with chutes, a dipping vat lined with galvanized-iron, and a capacious dripping yard. The contents of the vat are heated with a Daisy hot water heater, a suitable boiler being conveniently placed for the preparation of the dip. The water supply is secured from the Kootenay river by means of a  $3\frac{1}{2}$  horse-power gasoline engine connected with a 3,000 gallon water tank situated near the vat. The squeezer is of a good pattern and is built so as to render the examination of unbroken horses safe, rapid and efficient. The corral here is connected by a lane with a suitable unloading chute and yard provided by the railway company, and placed some distance away, owing to the peculiar nature of the ground.

The corrals at Nelson are situated next to the Canadian Pacific Railway stock yards, and are connected with them. They are 90' x 30' over all, divided into two main divisions. They are also provided with squeezers, dipping vat, dripping yard, etc. Owing to the peculiar nature of the ground in this neighbourhood and its liability to overflow under certain conditions, considerable filling was necessary before the corrals were erected, and for this reason also steam heating appliances have been substituted for the hot water system.

As quite a number of dairy cattle and stock swine are imported at this point, a testing and quarantine stable 60 x 30 feet has been fitted up in connection with the corrals. The water supply is secured from the city system.

The corrals at Midway are built on the same plan and are of the same dimensions as those at Nelson, they are also situated on the Canadian Pacific Railway, and are connected with their yards. Water is supplied from the C.P.R. pipes, and the hot water circulating system is used for heating the contents of the dipping vat. It was thought unnecessary to provide any stable at this point.

Suitable premises have been secured in Rossland for the purpose of testing imported dairy stock, and for the isolation of small lots of swine imported from the United States.

I am pleased to report that detention corrals have been provided by the Canadian Pacific Railway Company on their line at Huntington, B.C., and that similar accommodation for live stock has been erected by the Great Northern Railway on their line at Douglas, B.C. The inspection and disinfection of stock cars has been carried out at a number of points where beef cattle are received from the mange infected districts of the Northwest.

I have had to deal with somewhat serious outbreaks of glanders at Vancouver and in the Okanagan Valley, at Vernon, Kelowna and Peachland. The disease has apparently existed for some time at Vancouver and Peachland. It is impossible to state to what extent it exists at Vernon and Kelowna, as we are just about to com-



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mence a proper investigation at these points. To date, 192 head of horses have been tested with mallein, 84 of which reacted and were destroyed, 64 passed the test successfully and 41 were found suspicious, 14 of these suspicious horses have been retested so far, of these two reacted and were destroyed, nine passed the test and three still remain suspicious and will be tested again. In nearly all reactors the history of the cases points to direct or indirect contact with diseased animals and this no doubt accounts for the large percentage of reactors.

Very little disease has been found among range horses so far. This is very gratifying, as an extensive outbreak among them would be very difficult to deal with, owing to the rough condition of the country over which they roam and to the presence of large bands of ownerless wild horses.

I have had associated with me in dealing with this outbreak, Drs. Bland and Gibbins at Vancouver, and Dr. H. H. S. George in the Okanagan.

An isolated case of mange was located in the Crow's Nest near Michel, B.C. This was quarantined and dealt with according to the regulations by Dr. Bell.

I examined with Dr. Hadwen, of Nelson, a mare imported from Washington, which showed suspicious symptoms of *maladie du coit*. She was refused entry and returned to the United States.

Enzootic ophthalmia prevailed to a considerable extent in the dry belt districts of the province during 1904, but has not been reported this year.

No cattle were tested for export to the United States.

The general condition of the live stock industry in British Columbia during the year has been satisfactory, and fairly good prices have prevailed; but the importation of thousands of live sheep and hundreds of thousands of dollars worth of the products of the hogs annually from the United States for consumption in this province seem to indicate that there is still plenty of room for the development of these branches of the live stock industry here.

I have the honour to be, sir,  
Your obedient servant,

The Veterinary Director General,  
Ottawa.

S. F. TOLMIE.  
*Inspector.*

W. S. BELL, V.S.

CRANBROOK, October 31, 1905.

SIR,—I have the honour to submit to you my report for year ending October 31, 1905, of stock inspected at the ports of Gateway and Rykets, and am pleased to say that the stock as a rule is of a better grade, with the exception of a few lots which were not up to the standard, and consequently were turned back.

One outbreak of mange occurred in my district, which was easily stamped out on account of it being in an isolated place.

I am pleased to say that this was the only case of contagious disease I had in my district.

Following are the number of animals inspected at ports Rykerts and Gateway:—

Horses.. . . .	1,346
Cattle.. . . .	420
Mules.. . . .	9

I have the honour to be, sir,  
Your obedient servant,

The Veterinary Director General,  
Ottawa.

W. S. BELL,  
*Inspector.*



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J. W. BLAND, V.S.

VANCOUVER, B.C., October 31, 1905.

SIR,—I beg to submit a report of inspection made by me at ports of Vancouver and Westminster district and sub-ports of Huntingdon and Douglas, for year ending October 31, 1905.

The following animals were inspected at Vancouver: Cattle 1, horses 85, sheep 25,893, all of which have passed inspection.

On August 1 I assumed the duties of veterinary inspector for New Westminster district and sub-ports of Huntingdon and Douglas, according to your instructions. At the above ports were inspected the following animals: Cattle 37, horses 55, mules 2, sheep 1,548, of which 36 cattle, 44 horses and 2 mules were entered as settlers' effects. All the above animals passed inspection. Previous to July 1, I received the inspection fees as my remuneration for my work; since that time I have been on salary, and have returned to the department the inspection fees collected.

Corrals have been erected by the railway company at Huntingdon and Douglas. This is a decided improvement and will facilitate the work of inspection at those ports. Stock yards in these districts have been kept in a clean and sanitary condition during the year.

A rather serious outbreak of glanders has occurred in Vancouver this summer; prompt and effective measures have been taken to stamp out the disease as rapidly as possible. All cars arriving with cattle from mange affected districts of the Northwest have been thoroughly cleansed and disinfected upon arrival at this port; this work has been carefully carried out by the railway officials.

I desire to take this opportunity of thanking Dr. S. F. Tolmie for practical demonstrations and suggestions *re* maladie de coït.

Also to thank His Majesty's customs officers and officials of various transportation companies concerned, for their kind assistance in carrying out the regulations of the department.

I have the honour to be, sir,  
Your obedient servant,

J. W. BLAND,  
*Inspector.*

The Veterinary Director General,  
Ottawa.

D. TAMBLYN, D.V.S.

MIDWAY, B.C., October 31, 1905.

SIR,—I have the honour to submit my first annual report for the Department of Agriculture from March 13, 1905, to October 31, 1905.

My duties commenced at Ottawa under your personal supervision and during the six weeks there consisted chiefly of car inspection, outbreaks of glanders and mange.

The following table will give you the location and number of animals affected :—



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Location.	Disease.	Number tested.	Number Des- troyed after 1st test.	Number Des- troyed after 4th test.	Number Des- troyed showing clinical symp- toms.	Number Sus- picious.	Number animals affected.	Number healthy.
Kempville.....	Mange.....	.....	.....	.....	.....	.....	2	.....
Ottawa.....	Glanders.....	9	5	.....	2	.....	7	2
Mont Cerf.....	".....	11	4	3	2	1	10	1
		20	9	3	4	1	19	3

Number of stock cars inspected, 21; all of which I had thoroughly cleansed and disinfected.

I found in the district of Mont Cerf, P.Q., that the outbreak of glanders emanated from the numerous lumber camps in that vicinity, and the disease spreading through the disposal of these unfit horses to farmers for agricultural purposes.

On April 28, 1905, I received your letter transferring me to Grand Forks, B.C., to take over the boundary inspection work, including the outports of Grand Forks, Midway, Carson and Cascade, B.C.

During that period I have inspected the following stock:—

	For entry.	In transit.
Horses.. . . . .	111	755
Mules.. . . . .	...	24
Cattle.. . . . .	152	324
Sheep.. . . . .	3003	...
Swine.. . . . .	172	...
Total .. . . . .	3438	1084

Number of stock cars inspected (5) five.

On August 14, 1905, I inspected four horses in transit between the United States and Midway, B.C., and discovered a clinical case of glanders which was immediately destroyed and burnt, and the remaining three I tested with mallein, neither reacted. The usual precautions as to cleansing and disinfecting the premises were taken.

I also tested twenty-four head of cattle intended for milk and breeding purposes which I found healthy and in good condition.

The corrals at Midway are completed, the work being carried out in a very satisfactory manner. I should like to suggest that a stable and office be built at Midway. This would not only be of great service to the department, but to the public as well. At present we have no stable, consequently our testing has to be carried on in the open corral.

Your order issued in August respecting animals in transit has proved very effective, and is considered by the stock owners of this district to be a very essential one.

Following your instructions I transferred my headquarters to Midway, B.C., arriving there on June 12, 1905.

On September 2, I gave over the inspection work at Grand Forks to Dr. Frank, so that the inspections, &c., for the months of September and October for that port are not included in my report.

The general health of stock in the ports mentioned has been good, nothing except that contained in my report having occurred.



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In closing my report I desire to mention the cordial assistance afforded me by Dr. Tolmie, on taking over the work in this district.

I have the honour to be, sir,  
Your obedient servant,  
D. TAMBLYN,  
*Inspector.*

The Veterinary Director General,  
Ottawa.

E. C. OLIVER, V.S.

NELSON, B.C., October 31, 1905.

SIR,—I have the honour to submit the following report:—

Since transferred here last August I have visited the principal parts of my district. I visited the Warreta district, where some horses had been destroyed last June, and the four ranches were quarantined, and many other districts, and have not found any disease. I tested for milk production at Rossland 28 cows, none re-acted.

Number of horses inspected.. . . .	231
“ mules inspected.. . . .	17
“ cattle inspected.. . . .	200
“ sheep inspected.. . . .	823
“ swine inspected.. . . .	208
Total amount of inspection fees.. . . .	\$91.70

I have the honour to be, sir,  
Your obedient servant,  
E. C. OLIVER,  
*Inspector.*

The Veterinary Director General,  
Ottawa.

J. W. FRANK, V.S.

GRAND FORKS, B.C., October 31, 1905.

SIR,—I have the honour to submit a report of work performed from January 1 to October 31, inclusive.

From January 1 until July 31, my work lay in the district of Westminster, B.C. During that period the following animals were inspected for importation:—

Horses.. . . .	271
Mules.. . . .	6
Cattle.. . . .	238
Sheep.. . . .	945
Swine.. . . .	4



## SESSIONAL PAPER No. 15a

Since September 1, I have been stationed at Grand Forks, B.C., and up to the present time the following animals have been inspected:—

## Imports—

Horses.. . . .	161
Mules.. . . .	2
Cattle.. . . .	38
Sheep.. . . .	21
Swine.. . . .	136
Fees collected.. . . .	\$19.69

## Exports—

Horses.. . . .	2
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At the present time four swine are in quarantine, which will not terminate until November 9.

On March 18 a very fine Red Poll bull was refused admission, as he reacted vigorously to the tuberculin test. On July 11 a settler was refused admission for tubercular cattle, and on several other occasions tubercular cattle were refused entry to Canada; with these few exceptions the animals inspected were healthy.

On June 6, I tested and saw destroyed a case of glanders, in Vancouver city, one horse only was tested, and tested but once.

On July 20, I tested and saw destroyed another horse suffering with glanders; this case being the one which brought to notice the serious extent to which the contagion had been spread in and around Vancouver city.

I have the honour to be, sir,

Your obedient servant,

J. WILLIAMSON FRANK,

*Inspector.*

The Veterinary Director General,  
Ottawa.

G. S. JERMYN, V.S.

Osoyoos, B.C., October 31, 1905.

SIR,—I beg to submit the following report for the quarantine port of Osoyoos, B.C.

Since being opened in April last there has been no outbreak of contagious or infectious diseases in this district. Nor have any diseased animals been presented for inspection for entry.

The following is the number inspected and passed from the United States into Canada up to October 31:—

Horses.. . . .	138
Cattle.. . . .	88
Sheep.. . . .	149
Swine.. . . .	8

I have the honour to be, sir,

Your obedient servant,

G. S. JERMYN,

*Inspector.*

The Veterinary Director General,  
Ottawa.



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C. R. RICHARDS, V.S.

VICTORIA, B.C., October 31, 1905.

SIR,—I submit the following as my annual report of the work carried on by me at the above port during the past year.

There has been a total importation of horses, 84; cattle, 14; sheep, 24,947; goats, 7; mules, 20. Excepting two cattle returned for being tubercular and two horses for being under valuation, all were admitted.

I was called on to inspect seven horses exported to the United States.

During the year I have tested twelve horses for glanders with four reactions, three were held as suspicious for a retest which was applied in three weeks' time with no reaction, making the number of tests fifteen. The four reactors and one showing clinical symptoms, numbering five in all, were destroyed and dealt with according to the Act.

Hog cholera in the early part of the year called for considerable attention, and I caused to be destroyed 33 hogs as being affected. These cases were the last of the outbreak reported of in my report for 1904.

I have the honour to be, sir,

Your obedient servant,

The Veterinary Director General,  
Ottawa.

C. R. RICHARDS,  
*Inspector.*

J. GIBBINS, M.R.C.V.S.

VANCOUVER, B.C., October 31, 1905.

SIR,—I have the honour herewith to submit my report.

I commenced my duties on August 28, viz.: to suppress the outbreak of glanders we have in our midst.

My total number tested up to October 31 is 81. Retests 7. Ceased reactors 6. Condemned and slaughtered 20. To be retested 9.

I have the honour to be, sir,

Your obedient servant,

The Veterinary Director General,  
Ottawa.

JOHNSON GIBBINS,  
*Inspector.*

ASSISTANT COMMISSIONER WOOD.

DAWSON, Y.T., October 31, 1905.

SIR,—I have the honour to submit this my annual report for the year ended October 31, 1905, accompanied by reports from the veterinary staff-sergeants acting as inspectors at Dawson and Whitehorse.

We have but two points at which veterinary inspectors are stationed, namely Whitehorse, where Staff-Sergeant R. C. M. Nyblett is in charge, and Dawson, where Staff-Sergeant G. A. Acres attends to the duties.

The work of the inspectors in the Territory is largely of a preventive nature and, that this is necessary, is very evident from the way in which mange and more particularly glanders, makes a sporadic appearance here and there throughout the country.



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Glanders during the year was confined altogether to the Dawson district, no case being discovered in Whitehorse or districts tributary thereto.

Veterinary Staff-Sergeant Acres inspected some 75 head of horses, but of these it was not considered necessary to test 50. Of the remaining 25, 12 were destroyed, 2 showing clinical symptoms and 9 as reactors to the mallein test; the balance, 12 head, were found in good health and entirely free from disease after testing.

In the Dawson district one case of purpura-haemorrhagica occurred, and as the animal when inspected was found to be in the last stages of the disease, it was destroyed.

Two cases of malaria also were reported both of which terminated fatally.

These two cases were the cause of some discussion, as, at the time of the death of the animals, an epidemic of malaria, or dysentery, was prevalent among the inhabitants of Dawson and vicinity, and no particular cause was forthcoming as to its origin. By some of the medical profession the cause was attributed to the contaminated source of our water supply and, in support of this contention, the death of the animals referred to was brought forward. Veterinary Staff-Sergeant Acres, however, refused to admit this and claimed that the horses contracted the disease from feeding on low marshy ground.

Fourteen head of horses were found to be affected with mange on arrival from the Upper River; all made good recovery and the disease was confined to the original band.

An outbreak of hog cholera also occurred on a small island in the vicinity of Dawson. Where the animals contracted the disease, whether en route, or whether the outbreak was entirely due to local causes, could not be ascertained. The circumstances in this case would seem to be peculiar as the hogs were obtained at Mission Junction, B.C., at which place there is no history of hog cholera. In view of this fact Staff-Sergeant Acres held a most thorough examination of the animals affected, holding post-mortems on several and carefully watching the symptoms of those still remaining alive, until he was fully satisfied that the disease was what he had diagnosed it to be—hog cholera.

In the Whitehorse district the only cases of infectious or contagious disease reported were two of mange. One of the animals recovered and the other was destroyed.

During the year the following stock was imported into the territory for Dawson: Horses, 65; cattle, 1,488; sheep, 2,916; calves, 73, and hogs 223; 422 cattle, 721 sheep, 23 horses and 150 hogs passed through destined for Alaskan points.

A considerable number of each of the above were also imported into the Whitehorse district, especially horses. These were brought in principally by the White Pass and Yukon Stage route, the Bullion Hydraulic Company and the Conrad Mining Company.

The cattle, sheep, calves, &c., imported into Dawson and Whitehorse were destined for the markets and were slaughtered as required.

The far greater proportion of the animals imported were from Canadian points. The duty on stock and inspection by the veterinary inspectors no doubt contributed largely to this.

The general conditions of the territory as far as horses are concerned have much improved and I think the owners of stock have realized that it pays better in the long run to co-operate with the inspectors in stamping out the disease than in endeavouring to conceal it.

I have the honour to be, sir,

Your obedient servant,

Z. T. WOOD,

*Assistant Commissioner,*

*Com. R.N.W.M. Police Yukon Territory.*



R. M. NYBLETT, V.S.

WHITEHORSE, Y.T., October 31, 1905.

SIR,—I have the honour to submit this my annual report of work done for the Department of Agriculture in this district for the year ending October 31, 1905. During the year the following animals were inspected:—

	For importation to Yukon Territory.	Passing through en route to Alaska.	Total.
Horses.....	140	50	190
Mules.....	20	16	36
Cattle.....	6	455	461
Sheep.....	.....	821	821
Swine.....	42	50	92

All were found to be apparently in good health.

Two cases of mange in horses came under my notice during the year and were quarantined; one of these recovered and was released, the other was destroyed. A third horse I had isolated as a contact case, but it did not develop the disease and was released. Some work horses which had been working in the bush in the north part of the district were shipped down the river, and on arrival at Dawson were found to be suffering from mange and were isolated there.

During the winter a number of horses suffered from a form of eczema, which at first sight simulated mange, but this disease was not contagious.

During the summer a few of the horses, belonging to the White Pass and Yukon Route Mail Service, suffered from influenza, and two of them died, but, the epizootic did not spread, or last for any length of time.

With the above exceptions no cases of contagious disease occurred during the year.

I have the honour to be, sir,  
Your obedient servant,

R. M. NYBLETT,  
*Veterinary Staff-Sergt.*

The Veterinary Director General,  
Ottawa.

G. H. ACRES, V.S.

DAWSON, Y.T., October 31, 1905.

SIR,—I have the honour to forward the following annual report for the year ending October 31, 1905, of work done for the Department of Agriculture in this district.

The number of cases of glanders which came under my observation has been much less than for the previous year. The following is a list of cases treated: (horses and mules):—



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Destroyed on clinical symptoms.. . . . .	2
Destroyed on reaction to the mallein test.. . . . .	9
Released after a second test.. . . . .	2
Tested and no reaction.. . . . .	12
Inspected but not tested.. . . . .	50
<hr/>	
Total.. . . . .	75

Three cases of suspected glanders were reported to me, but on examination I found one to be influenza, one chronic catarrh, one purpura hæmorrhagica; the latter was in the last stage of the disease upon my arrival, and I recommended the animal's destruction at once. I found two cases of malaria or swamp fever; the animals were running on marshy ground, both cases died. Compensation was claimed for seven animals, which reacted and showed no clinical symptoms of glanders. The majority of cases of glanders were found in the town of Forty Mile, which is close to the border of Alaska. I think that this outbreak was due to affected horses which at some time or other visited Forty Mile from Alaskan points. At first great difficulty was encountered as to the best means for protecting Canadian horses against contamination of the disease. Owing to the fact that horses are continually crossing and re-crossing the line it is impossible to keep them separated. It was first suggested that separate stables should be set aside, but this was found impracticable; I think the suggestion made a short time ago that Corporal Cudlip, of the Royal Northwest Mounted Police, be appointed assistant inspector at Forty Mile, and a stable be set aside for quarantine purposes, so that any suspicious cases may be held until the arrival of the inspector from Dawson, is the most practicable one. In this way, I think that the danger of infection would be greatly minimized.

Owing to the large amount of transient work which takes place in this district, the Yukon Ordinance requires that all public stables be disinfected twice yearly; I think that this helps greatly to keep down disease amongst horses and mules.

Fourteen horses which arrived from the southern part of the territory were found to be affected with mange, these were quarantined and carefully treated until all signs of the disease disappeared. The above is the only outbreak of mange which has occurred in this district during the past year.

An outbreak of hog cholera occurred on the premises of Mr. Marshall, residing four miles down the river from Dawson. Fifty young hogs were imported from the outside last June, and early in August the owner reported that they were dying off. After careful post-mortems and examination of several suffering at the time, I found the disease to be hog cholera. Fifteen died, the remainder were slaughtered. This is the first attempt that young hogs have been imported into the country for the purpose of raising and fattening for store purposes, and I think will be the last.

On the whole the general health of live stock in this district during the past year has been very good, the percentage of contagious disease being very small. I am sorry to say that the number of horses in the country is on the decrease, very few were imported from the outside last year, and a great number were exported to the Tanana. I expect that many more will follow this winter.

The beef, mutton and pork imported for slaughter here was of excellent quality, and arrived in better condition than the previous year. The beef and pork imported was all Canadian, the larger part of the mutton being imported from the United States.

I have the honour to be, sir,

Your obedient servant,

G. H. ACRES.

*Veterinary Staff-Sergt.*

The Veterinary Director General,  
Ottawa.



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GEORGE HILTON, V.S.

OTTAWA, ONT., March 31, 1906.

SIR,—I have the honour to submit my report for the five months ending March 31, 1906.

During this period I have investigated a few reported cases of glanders in this city, with negative results, otherwise my duties have been confined to your office.

I have the honour to be, sir,

Your obedient servant,

GEORGE HILTON,

*Inspector.*

The Veterinary Director General,  
Ottawa.

C. H. HIGGINS, B.Sc., D.V.S.

March 31, 1906.

SIR,—I have the honour, in accordance with your request under date of March 29th, to transmit this my report covering the period from November 1, 1905, to March 31, 1906.

This period of five months is the one during which a smaller number of specimens for diagnosis are received than at other seasons of the year, due in a large measure to climatic conditions, however, the material received for examination shows a total of fifty-nine series compared with fifty-five series during a similar period of the year preceding. Many fowls are still being forwarded to the laboratory for us to determine the nature of the affection to which they succumbed and the advice given in the individual reports sent through your office has been appreciated.

The greatest increase in the work of this institution is to be noted in connection with the preparation of mallein and so great has been the demand upon our facilities, that I found it necessary to provide greatly increased incubating space of a temporary character, for use in connection with its manufacture.

The temporary stable which was completed early in November last, has enabled work on *maladie du coït*, three cases of this disease having reached here on the 20th of that month. These cases have at no time presented active clinical symptoms though there has been a marked variation in the differential blood counts, indicating the gradual progression of the disease.

The increasing importance of investigations on the pathology of the blood in connection with human medicine, makes it necessary for us to lay more stress on this feature in diseases of animals, and there are now interesting records in connection with some of our routine experimental work which will prove of sufficient value, when completed, to compensate for the time and labour spent in their preparation.

Tuberculin has, as formerly, been forwarded from the laboratory, and I am now taking the necessary steps toward the manufacture of the entire amount used and anticipate in this connection, that the saving thus made will assist in increasing the efficiency of this institution.

The greatest necessity at this time, in connection with the equipment of the laboratory, is increased incubator space accompanied by proper arrangements for avoiding contaminating organisms when inoculating the large culture flasks used in the preparation of toxines.



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The assistance rendered by E. A. Watson, V.S., continues to relieve me of many details in connection with the laboratory routine, thus affording more time for the consideration of experimental work which it is necessary to take up.

It is impossible at this time to give a full report of the work of the laboratory for the period indicated on account of the incompleteness of experimental data, and the impossibility of completing them for incorporation in this report.

Such of the work as will interest the reader of this report is appended hereto, that a general idea may be obtained of the work of this institution during the past five months.

## MALLEIN.

There have been shipped from the laboratory on request from your office, 6,453 doses of mallein, an amount during five months very nearly equaling the entire amount of the preceding year. The accompanying table indicates the amount sent out each month and enables a comparison with the amount sent out monthly during previous years.

	1903-4.	1904-5.	1905-6.
November.. . . . .	291	500	1,635
December.. . . . .	40	295	1,082
January.. . . . .	135	365	1,606
February.. . . . .	155	432	985
March.. . . . .	203	400	1,145
April.. . . . .	184	500	....
May.. . . . .	412	625	....
June.. . . . .	422	1,055	....
July.. . . . .	75	580	....
August.. . . . .	560	861	....
September.. . . . .	305	1,163	....
October.. . . . .	371	1,043	....
Total for year.. . . . .	3,153	7,819	
Total for five months.. . . . .			6,453

At present there is on hand very nearly 10,000 doses which amount with the above has been prepared at the laboratory. One difficulty experienced in connection with the manufacture of this material has been occasioned by the limited incubator space available at the laboratory. This difficulty has been partially overcome by the fitting up of a temporary incubating chamber, but it will be necessary to make permanent the installation of a chamber of sufficient size to meet our immediate demands and those of some years to come. The heating of this temporary incubator is by gas and some difficulty was experienced in fitting up an automatic arrangement for maintaining the desired temperature, due to the fact that it is impossible to turn down an acetylene burner designed for heating purposes without having it flash back. This difficulty was overcome and the experience thus gained will enable the arranging of the heating device on a permanent installation without any anxiety as to its efficiency.

Another difficulty experienced in the preparation of mallein is the contaminating of the large culture flasks with organisms foreign to the work in hand and this feature can be eliminated on the installation of an incubating chamber by connecting it with the proper preparation rooms which in other institutions of a similar nature have been found indispensable. Sufficient space is available for the increase briefly outlined above in the basement of the building.



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TUBERCULIN.

Sufficient tuberculin to test 1,967 head of cattle has been sent from this laboratory on order from your office. An increase in the amount sent out is to be noted here as indicated in the following table :—

	1903-4.	1904-5.	1905-6.
November . . . . .	326	226	405
December . . . . .	326	374	437
January . . . . .	350	180	309
February.. . . .	303	135	438
March.. . . .	295	263	378
April.. . . .	146	497	....
May.. . . .	272	394	....
June.. . . .	119	149	....
July . . . . .	123	126	....
August.. . . .	173	351	....
September.. . . .	70	266	....
October.... . . .	146	184	....
Total for year . . . . .	2,649	3,145	
Total for five months.. . . .			1,967

The necessary steps have been taken and I anticipate that there will be no difficulty in preparing all of the tuberculin required by the department during the coming year, although the detail work in this connection has consumed, and will continue to consume considerable time in the laboratory routine.

ANTHRAX.

Anthrax was positively diagnosed in material forwarded from La Baie du Febvre after negative findings in several specimens received during the course of the same outbreak.

In making mention of this instance of a positive finding after several negative findings, it is my desire to impress upon those forwarding the material for similar examinations, that blood, removed from the carcass twenty-four hours or longer after death, is of little value as the putrefactive organisms kill off the anthrax germs in all portions of the dead animal's system and to further point out that the bloody fluid exuding from the natural body openings together with the blood in the superficial portions of the body (skin, ear in particular, also tail), are more likely to supply positive evidence on microscopic examination than blood taken from any internal organ.

MALADIE DU COIT.

The mares affected with maladie du coit which reached the laboratory on the 20th of November last, have given us an opportunity of studying this disease in its chronic form. Much experimental work has been undertaken in this connection, but at no time has there appeared any evidence of the infective agent, *Trypanosoma Equiperdum*. All animal inoculations have been negative. Efforts have been repeatedly made to demonstrate this trypanosoma by the methods suggested by the various authorities as well as attempts on original lines.

Some points not mentioned by other observers have been noted the most important of which is the change in the percentage of the various varieties of leucocytes as revealed by a differential blood count. In passing I may mention that within the past few years, an increasing amount of attention has been given to the differential count of the leucocytes of the blood in connection with certain diseases affecting the human



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being and more recently this method of examination has claimed the attention of comparative pathologists, notably Burnett, Moore and Mier.

The blood counts conducted by these authors have shown that certain definite affections are indicated by certain variations in the percentages of leucocytes in the blood. Acting upon the suggestion presented by this data it has been found that there is a marked variation from the normal, in the percentages of certain of the leucocytes, as shown by differential counts of the blood in the cases of *Maladie du Coit* at the laboratory. This work upon the blood has given ground for the suspicion that we may be able to determine something definite concerning the pathology of this affection as seen in Canada, although it must be constantly borne in mind that the cases on which we are working cannot give sufficient evidence from which to draw reliable conclusions. In both cases that are under observation the progression of the clinical manifestations bears a close relationship to the changes noted in the differential blood counts.

Of the three mares received, one succumbed within a month of her arrival. Of the two remaining, one is gradually breaking down, while the other is in practically the same condition as on her arrival.

The finding of the *Trypanosoma Equiperdum* by Marek in cases of dourine in Hungary, as reported at the last International Veterinary Congress at Buda-Pesth, establishes beyond a doubt the causal role of this parasite in the '*Beschalseuche*' or dourine of that country. Buffard and Schneider, instance in France, the recovery of an affected stallion, but nevertheless this stallion was able to infect mares in whose blood trypanosoma were found by them, which finding was confirmed by Leclainche. Thus, we are face to face with the probability that the same parasite is concerned with the disease on this continent and that its identification is largely a matter of obtaining suitable cases, coupled with careful and systematic experiments and close observation.

As formerly, your appreciation of the work of this institution together with the encouragement offered to develop still further its usefulness, is a stimulus to take up research work on problems confronting this branch, in addition to the necessary laboratory routine, and I trust that the effort will fully meet your expectations.

I have the honour to be, sir,

Your obedient servant,

CHAS. H. HIGGINS,

*Pathologist.*

The Veterinary Director General,  
Ottawa.

A. E. MOORE, D.V.S.

VANCOUVER, March 31, 1906.

SIR,—I have the honour to submit to you the following addition to my annual report of work done by me from November 1, 1905, to March 31, 1906.

I tested with mallein in the province of Ontario thirteen horses, out of which three reacted and were destroyed.

Acting under your instructions, I tested a private herd of cattle, numbering 38 with tuberculin which had been placed under your supervision. Three of these reacted, and have been branded and isolated.

I also investigated a reported outbreak of hog cholera in the vicinity of Winchester Springs, where I found a few sick hogs on one farm. At the request of the owner, a post-mortem examination was made upon one of these animals, the result of



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which proved the disease not to be hog cholera but verminous bronchitis, and consequently no action was taken.

## GLANDERS IN BRITISH COLUMBIA.

According to your instructions I left Ottawa for British Columbia on November 29, 1905, to co-operate with Dr. Tolmie in dealing with glanders in the city of Vancouver and also in the city and district of New Westminster. I have tested 389 horses, of which 80 reacted and were destroyed.

Many of these showed clinical symptoms, but in the majority of cases the disease has been of a mild type. As has been clearly shown by our tests there is much danger from these mild cases as they are capable of spreading infection to a large percentage of contact horses.

As the disease is so prevalent in this district a general inspection of all the large stables in Vancouver and New Westminster is being made.

## HOG CHOLERA.

During my stay in British Columbia a report was received from Chilliwack that pigs were dying in the Chilliwack valley.

As Dr. Tolmie was ill, he requested me to visit the valley and, on investigation, I found hog cholera on seven farms and 118 hogs were destroyed.

I asked Dr. Wm. Lawson to accompany me and left him to finish the work of inspecting the hogs of the neighbourhood and to superintend the disinfection of premises.

This outbreak started at the Chilliwack Landing Indian Reservation, where the Indians have been losing hogs for some time.

As all hogs belonging to the Indians were running at large and were in contact with the disease, we were obliged to destroy all hogs on the reservation. In all cases where hog cholera was found the adjoining farms were inspected.

No new cases have been reported in this valley since we finished our inspection three months ago.

On January 20, 1906, hog cholera was discovered on the premises of the provincial hospital for the insane at New Westminster, where out of ninety-one hogs thirty-four were affected.

The remaining fifty-seven were dressed for food. Dr. Bland assisted me in dealing with this outbreak.

Acting on a report from the Deputy Minister of Agriculture at Victoria, and on request of Dr. Tolmie, I visited the British Columbia Distillery Company on March 31, where I found hog cholera in its most virulent type.

All the hogs on the premises (68) were sick and a large number (36) had recently died.

Extensive lesions of tuberculosis and verminous bronchitis were co-existing with those of hog cholera. In all outbreaks of hog cholera that I have seen in British Columbia (except in the case of the distillery hogs) the disease has been in an extremely mild form. The proportion of deaths is usually less than in more severe climates.

I found the most advanced typical lesions of hog cholera in hogs that were scarcely perceptibly ill. Verminous bronchitis was associated with hog cholera in the majority of cases where I held post-mortems.

I have the honour to be, sir,

Your obedient servant,

A. E. MOORE,

*Inspector.*

The Veterinary Director General,  
Ottawa.



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M. C. BAKER, D.V.S.

MONTREAL, March 31, 1906.

SIR,—I beg to report that since October 31, 1905, there have been inspected and passed by me for export at the Canadian Pacific stock yards, Hochelaga, Montreal.

## CATTLE.

	Northwest.	Ontario.	U.S.A.
November, 1905.. . . . .	8,794	1,364	1,921
November, 1905 to March 31, 1906 ...	....	35	....
Total.. . . . .	8,794	1,399	1,921

## SHEEP.

	Canadian.
November, 1905.. . . . .	3,810

Total, 12,114 cattle and 3,810 sheep.

Of these 864 head of cattle and 3,008 sheep were shipped via Boston, 420 cattle and 260 sheep via Portland.

There were rejected as unfit for shipment, 17 head of cattle and 14 sheep. Of these, 6 cattles were effected with actinomycosis, the other animals were suffering from lameness and injuries.

On November 11, 1905, I received instructions from you that all sheep from Ontario passing through Montreal to the United States for slaughter that were not accompanied by a certificate of inspection from an inspector of the Department of Agriculture, must be unloaded and inspected here. Since then, there has been only one shipment of two carloads, 384 lambs, consigned to the New England Meat Company. These were inspected and found free from disease.

In December in accordance with your instructions, I visited La Baie du Febvre to investigate an outbreak of disease in cattle in that place. I found it to be anthrax, and reported at the time.

In January I tested with tuberculin for export to South Africa 133 cows, heifers and bulls, and got only three reactions.

I have the honour to be, sir,

Your obedient servant,

M. C. BAKER,  
*Inspector.*

The Veterinary Director General,  
Ottawa.

C. McEACHRAN, D.V.S.

MONTREAL, March 31, 1906.

SIR,—I have the honour to report that during the five months commencing November 1, 1905, and ending to-day, 247 horses were inspected by me, found healthy and exported from this port to Great Britain. Forty-three Clyd siales, viz., twenty stallions and twenty-three mares, were imported to Canada via the port of Montreal from Scotland. All were found free from disease, and allowed to land. Three horses were found in this city showing clinical symptoms of glanders, and were destroyed.



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Forty-one horses were subjected to the mallein test here, six of which reacted and were shot. At the market places and abattoirs here 10,812 cattle, 7,364 sheep, and 19,259 hogs were inspected, and it is my pleasing duty to report that not one single case of disease was found. All the sale stables and cab stands in Montreal, were regularly inspected.

I have the honour to be, sir,  
Your obedient servant,

The Veterinary Director General,  
Ottawa.

CHARLES McEACHRAN,  
*Inspector.*

B. A. SUGDEN, D.V.S.

MONTREAL, March 31, 1906.

SIR,—I have the honour to report to you as follows upon the inspection of live stock at the Grand Trunk stock yards for the period extending from November 1, 1905, to March 31, 1906.

*Inspected for export to British Ports via Montreal.*

Cattle.....	4,140
Sheep.....	378

*For export to British Ports via Portland and Boston.*

Cattle.....	9,185
Sheep.....	8,169

There were rejected twenty-one cattle, thirteen affected with antinomycosis and five for injuries received during transportation, there were also rejected seventeen crippled sheep.

During the same period the following United States stock passed through the yards for shipment to British ports via Portland and Boston:—

Cattle.....	35,091
Sheep.....	7,155

At Howick, I tested two head of cattle with tuberculin and eleven head at Athelstan, these being for export to the United States. None reacted.

I have the honour to be, sir,  
Your obedient servant,

The Veterinary Director General,  
Ottawa.

B. A. SUGDEN.  
*Inspector.*

J. H. FRINK, V.S.

ST. JOHN, N.B., March 31, 1906.

SIR,—I beg to report work at the station, from November 1, 1905, to March 31, 1906. The time has been largely occupied in the inspection of live stock for export to Great Britain. The number of cattle inspected for export to Great Britain being 25,472:—

Sheep.....	1,811
Horses.....	65



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Cattle shipped to South Africa, 450. Of the number shipped to the United Kingdom, 10,367 were United States cattle. 1,889 cattle were shipped out from the province of Alberta, originating chiefly from Milk River, Cayley, Cambrose, Lethbridge and Medicine Hat. No symptoms of mange were observed in them. All shipments were free from contagious disease except two or three cases of actinomycosis. It will be observed that there has been a great falling off in the shipment of sheep last year being about twenty thousand and this season falling below two thousand. Cattle for export have arrived in good condition, the comparative absence of snow in the eastern sections, much facilitated transport, giving a clear rail, good time being made from Montreal to St. John, and very few animals were detained from lameness or injuries in transit.

## CATTLE QUARANTINE.

No cattle have arrived here for quarantine this winter. Ten sheep arrived here on January 2, from Liverpool, but being unaccompanied by the official permit for importation, were not allowed to land. This matter was after a time adjusted by the department. Two cattle imported from Boston, Mass., were held for two days until the tuberculin certificates were approved, the difficulty being that the names of veterinarians were not on the official list of qualified men, connected with United States Bureau of Animal Industry. A number of horses have been imported from Great Britain for breeding purposes, 190 horses and 53 ponies. They were free from infectious disease. A number of importations were unaccompanied by health certificates issued in Great Britain, and they were held here until produced, and it is altogether probable that importers in the future will obey the regulations more closely.

I have the honour to be, sir,  
Your obedient servant,

The Veterinary Director General,  
Ottawa.

JAMES H. FRINK,  
*Inspector.*

W. JAKEMAN, V.S.

HALIFAX, March 31, 1906.

SIR,—I beg leave to submit my report for the period between November 1, 1905, to March 31, 1906.

Animals inspected for export at Halifax, N.S.:—

	Horses.	Cattle.	Sheep.	Swine.
Bermuda.. . . . .	8	7	189	4
Jamaica.. . . . .	..	....	80	..
Britain.. . . . .	..	1,042	..	..
Havre, France.. . . . .	..	150	..	..
Newfoundland.. . . . .	1	....	6	..
	9	1,199	275	4

I have the honour to be, sir,  
Your obedient servant,

The Veterinary Director General,  
Ottawa.

WM. JAKEMAN,  
*Inspector.*



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A. A. LECKIE, M.R.C.V.S.

CHARLOTTETOWN, P.E.I., March 31, 1906.

SIR,—I beg to report for five months as stated in your letter of March 29, ult., as follows : November and December, 1905, also January and February, 1906, March, 1906.

Exportation of 16 horses, 149 cattle, 422 sheep.

They were distributed as follows :—

Fourteen horses and four cattle to the West Indies. Two horses, 145 cattle and 422 sheep to Newfoundland.

The work in connection with contagious and infectious diseases amounted to one trip to Freetown, and marking cattle, December 30, 1905, and one trip to Central Bedeque, where I found cattle slaughtered. This comprises the work done in the interest of the Dominion government. In performing this work I found sufficient data to make me believe that tuberculosis is very much on the increase in this island, and I am sorry to say that it is in most cases traceable to imported stock bulls or their immediate descendants. It seems to me that if its prevalence is going to be stopped, some system of interprovincial legislation is required. Such for instance as a test schedule accompanying each animal sold for stock purposes from one province to another, and that it be required in each province when a breeder or stock farm has pure bred cattle for sale, that they be accompanied with a certificate showing a test as free, and that no breeder be allowed to sell as stock bulls any animal which has not been subjected to such test.

I have the honour to be, sir,

Your obedient servant,

The Veterinary Director General,  
Ottawa.

ANDREW A. LECKIE,  
*Inspector.*

J. A. COUTURE, D.V.S.

QUEBEC, P.Q., March 31, 1906.

SIR,—I have the honour to transmit my report for the period extending from November 1, 1905 to March 31, 1906.

There have come into this station during that period the following animals, viz.:

November 7, per ss. *Pretorian*, from Glasgow, Scotland, one bull and two heifers, West Highlands, for Sir Hugh Allan, Montreal.

December 1, per Intercolonial Railway, from Delavan, Ill., two standard bred colts for Victor Chateauvert, Quebec.

December 16, per Quebec Central Railway, from Denver, Mass., one mare for Max. Clement, Quebec.

On December 26, the last cattle left the quarantine and the station closed for the winter season.

During the winter the men have been kept busy repairing the several buildings and putting up the hay barn in a more convenient place. Presently they are preparing the sheds for the opening of navigation.

I have the honour to be, sir,

Your obedient servant,

The Veterinary Director General,  
Ottawa.

J. A. COUTURE,  
*Inspector.*



SESSIONAL PAPER No. 15a

W. H. PETHICK, V.S.

ANTIGONISH, March 31, 1905.

SIR,—In accordance with instructions contained in your letter of March 29, I have the honour to submit a brief report of the experiments conducted at this station between November 1, 1905, and March 31, 1906.

In my annual report, which is now in your hands, I gave a detailed record of the experiments which I had the honour of conducting under your direction during the year ending October 31, 1905.

The cause of Pictou cattle disease having been clearly demonstrated, as a result of the experiments above referred to, those were closed out; and although the experiments now in train give promise of important results, yet these have not progressed far enough for reliable reference. As you are thoroughly informed upon every stage of the work at this station, I presume that a detailed account is not now required. I therefore beg liberty to confine myself to a general outline of the experiments now under way.

An experiment is being conducted with a view of learning if native hay from which all ragwort plants have been carefully removed can be fed with safety. Three healthy young cows are being fed twice daily since November 1, 1905, upon clean native hay of the usual quality, being a mixture of clover, timothy and brown top.

In order to control this experiment, three healthy young cattle are being fed upon hay of the same kind and quality, but in this instance no care was taken to remove the ragwort plants growing therewith. The experiments with sheep and goats give promise of results of practical value.

*Pen No. 1.*

Four healthy sheep have been fed during the past two winters on native hay containing much ragwort, and have been pastured during the past summer on very weedy land, and although they have consumed large quantities of ragwort (both green and dried) appear to be in good health.

*Pen No. 2.*

Five healthy ewes, and three lambs were pastured during the past summer on ragwort infested land. The object being to learn if possible, when yellow staining of the flesh supposed to be caused by feeding upon ragwort begins. Several of these animals have now been slaughtered between July 21 and March 19. Careful post-mortem examination proved the flesh to be of normal colour. Two animals of the lot are yet alive and will be slaughtered, with your permission, within the next two months.

Acting upon your instructions I purchased on November 1, forty healthy ewes. They are divided into two equal lots and confined in suitable pens. One lot (pen No. 3) being kept at the old stable. The other lot (pen No. 4) at the new building. Four goats are kept with each division. One flock (pen No. 3) receive hay containing a large amount of ragwort, a small grain ration is allowed since March 1 to ewes with lamb. The other flock (pen No. 4) are kept under exactly similar conditions, except that in this case the hay is absolutely free from ragwort.

I believe that it is your wish that as soon as grass and weather permits that these two lots of animals be subdivided (and after being carefully marked) ten sheep and two goats of each lot to be fed on weed pasture, while the others are to be kept on land free from ragwort.

I may just mention that, early in December, all our sheep suffered from infectious ophthalmia. They, however, made a complete recovery, and are feeding well and appear healthy.

With your authority I purchased on January 28, a mare 8 years old, with a view of studying 'hepatic cirrhosis' as affecting the equine species. She is fed twice daily



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on hay which contains a large proportion of ragwort, this is chopped fine and well mixed.

A horse that has been at the station for some time is fed upon clean native hay and will control this experiment.

Some minor experiments with guinea pigs are carefully watched, but so far give nothing of interest.

In conclusion I may say that since my last report only five cases of cattle disease have been brought to my notice. These animals were slaughtered and compensation amounting to \$72 recommended.

The winter has been mild and exceptionally healthy, no contagious disease (except ophthalmia and tuberculosis) has existed in the county.

The usual number of visits for the purpose of investigating suspected outbreaks have been made.

I have the honour to be, sir,

Your obedient servant,

W. H. PETHICK,

*Inspector.*

The Veterinary Director General,  
Ottawa.

G. TOWNSEND, D.V.S.

NEW GLASGOW, N.S., March 31, 1906.

SIR,—I beg to report work on Pictou cattle disease from November 1, 1905, to March 31, 1906.

In November, 1905, there was one case at Maklefield from then up to the 31st of this month there has been none, a few reported suspected, but on examination proved not to be it.

I have the honour to be, sir,

Your obedient servant,

GEORGE TOWNSEND,

*Inspector.*

The Veterinary Director General,  
Ottawa.

F. S. MACDONALD, V.S.

SOURIS, PRINCE EDWARD ISLAND, March 31, 1906.

SIR,—I have the honour to report that no diseases, of a contagious character, have appeared in this section since my report of November 1, 1905.

It is satisfactory to note, and no doubt must be pleasing to you, that through your efforts in determining the cause of Pictou cattle disease the farmers of Prince Edward Island are being greatly benefited.

I have the honour to be, sir,

Your obedient servant,

F. S. MACDONALD,

*Inspector.*

The Veterinary Director General,  
Ottawa.



SESSIONAL PAPER No. 15a

E. C. THURSTON, D.V.S.

SYDNEY, March 31, 1906.

SIR,—Herewith I have the honour to submit report of inspection of live stock dealing with the period between November 1, 1905 and March 31, 1906:—

Exported to St. Pierre et Miquelon—

Cattle.... 22

Sheep.... 62

Swine.... 34

Imported from Newfoundland—

Horses.... 7

---

 Total .. 125

March 5.—Investigated case of suspected glanders at Bras D'Or, proved to be post pharyngeal abscess as a result of severe attack of influenza.

I have the honour to be, sir,

Your obedient servant,

E. C. THURSTON,

*Inspector.*

The Veterinary Director General,  
Ottawa.

B. B. KILLAM, D.V.S.

YARMOUTH, March 31, 1906.

SIR,—I beg to submit herewith my report of inspections of live stock made by me at this port for the five months ending March 31, 1906.

During this period several horses from the United States have entered at this port. But as they are exempted from inspection I have not kept a tabular sheet. One pig was held in quarantine which I have reported.

All stock within district are in a healthy condition. There have been no contagious diseases within district.

I have the honour to be, sir,

Your obedient servant,

B. B. KILLAM,

*Inspector.*

The Veterinary Director General,  
Ottawa.

E. W. HENRY, V.S.

FREDERICTON, N.B., March 31, 1906.

SIR,—In reply to your letter of the 29th ult., requesting me to furnish you with a report of the work done at the port of McAdam, N.B., from November 1, 1905, to March 31, 1906, I would state :—



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That since my appointment in March, 1905, until the present time, there has not been any work done by me.

That I have not had any notification of any importation of any stock having been made at the port of McAdam.

I have the honour to be, sir,

Your obedient servant,

E. W. HENRY.

*Inspector.*

The Veterinary Director General,  
Ottawa.

V. T. DAUBIGNY, M.V.

TERREBONNE, P.Q., 31 mars 1906.

MONSIEUR,—J'ai l'honneur de vous adresser le rapport demandé par votre lettre du 29 mars, c'est-à-dire du 1er novembre au 31 mars dernier.

Pendant ce laps de temps, je n'ai reçu aucun avis de votre département se rattachant aux maladies contagieuses des animaux domestiques, mais j'ai été demandé par des médecins vétérinaires pour connaître mon opinion sur différentes maladies paraissant suspectes ; examen fait je n'ai découvert rien de contagieux.

Durant ces cinq mois, je n'ai pas eu connaissance d'aucune autre affection contagieuse sur les animaux.

J'ai l'honneur d'être, monsieur,

Votre très humble serviteur,

V. T. DAUBIGNY,

*Inspecteur.*

Directeur Vétérinaire General,  
Ottawa.

J. D. WHYTE, D.V.S.

SHERBROOKE, March 31, 1906.

SIR,—I have the honour to submit to you this, my report, for five months, from November 1, 1905, to March 31, 1906.

GLANDERS.

During the five months I have inspected and tested with mallein 64 horses, of which 27 reacted and were destroyed; 1 was destroyed from clinical symptoms only, making a total of 28 destroyed, the premises being duly quarantined, having to be inspected later, as in most places it was impossible to obtain disinfectants to properly disinfect the premises at the time of destroying the horses, making it necessary to visit each premises the second time. I also visited three premises and held three autopsies on horses that had died, being suspected of glanders, but found the deaths were due to other diseases.



## SESSIONAL PAPER No. 15a

## MANGE.

I have quarantined three premises, seven horses in all, as follows:—in county of Beauce, 2 premises, 5 horses; county of Megantic, 1 premises, 2 horses.

## INFLUENZA.

I also visited the county of Megantic to investigate a supposed case of glanders, but which proved to be influenza, one horse having died previous to my visit.

## INSPECTION AT PORTS OF ENTRY.

Sherbrooke—Cattle, 1; swine, 1.

Stanstead Junction—Cattle, 1.

Mansonville—Cattle, 1 (this one was also tested).

Cattle tested for export, 3.

I have the honour to be, sir,

Your obedient servant,

J. D. WHYTE,  
*Inspector.*

The Veterinary Director General,  
Ottawa.

A. A. ETIENNE, M.V.

MONTREAL, March 31, 1906.

SIR,—I have the honour to submit to you my report from November 1, 1905, to March 31, 1906.

During the past five months I have tested 32 horses with mallein, 20 of which reacted and were destroyed. Two were destroyed on clinical symptoms only.

A large proportion of these horses that I have destroyed were in Yamaska and Drummond counties, where several others had been destroyed in previous years.

I have examined three horses clinically. The suspicious symptoms were due to distemper and pulmonary emphysema.

## ANTHRAX.

Upon receiving instruction, I visited the same premises twice in the parish of La Baie du Febvre, to investigate an outbreak amongst animals that were dying suddenly, several head having died in a short time. The rest of the herd has been inoculated with anthrax vaccine, and no deaths have been recorded since December 25, 1905.

December 11, 1905, I was instructed to investigate a complaint that mange existed in St. André d'Argenteuil. After careful investigation I found that the complaint was not founded on facts.

I have the honour to be, sir,

Your obedient servant,

A. A. ETIENNE,  
*Inspector.*

The Veterinary Director General,  
Ottawa.



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J. D. DUCHENE, D.V.S.

QUEBEC, March 31, 1906.

SIR,—I have the honour to submit to you my report for the five months from November 1, 1905, to March 31, 1906.

I have tested with mallein 52 horses, of which 23 have been destroyed, some of them were suffering with clinical symptoms of glanders. Out of this number (52) six have been examined and tested as suspect cases but were either suffering with catarrh or bronchitis.

I have also investigated five outbreaks of mange, which are presently quarantined and undergoing treatment.

I regret to state that the territory between Ste. Marguerite, on the Saguenay river, and Portneuf, on the St. Lawrence, is badly infected with glanders. This I think is due to the want of knowledge of the people and bad hygiene.

I have the honour to be, sir,  
Your obedient servant.

JOHN D. DUCHENE,  
*Inspector.*

The Veterinary Director General,  
Ottawa.

T. R. DUCHENE, V.S.

CHICOUTIMI, March 31, 1906.

SIR,—I have the honour to submit to you my report for the time since November 1, 1905, to March 1, 1906.

## MANGE.

During that period in the county of Chicoutimi, forty-nine horses were placed under quarantine, suffering from mange, and twenty-eight farms found infected; ten of these horses are now relieved. They were all placed under proper treatment.

## GLANDERS.

During the same period, in the county of Chicoutimi, I have tested with mallein five horses, two were killed and buried, one of them upon clinical symptoms.

In the county of Saguenay, I have tested in the same manner twenty-five horses and killed two, one upon clinical symptoms.

I have the honour to be, sir,  
Your obedient servant,

THOS. R. DUCHENE,  
*Inspector.*

The Veterinary Director General,  
Ottawa.



J. O. GUY, M.V.

The Veterinary Director General,  
Ottawa.

The Veterinary Director General,  
Ottawa.

The Veterinary Director General,  
Ottawa.



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WM. STUBBS, V.S.

CALEDON, March 31, 1906.

SIR,—I have the honour to submit this, the continuation of my annual report, commencing on November 1, 1905, and continuing until March 31, 1906.

During this time I have tested with 'tuberculin' twenty-one head of cattle, two of which reacted.

I have also tested with 'mallein' seven horses, none of which reacted.

I have also visited the barns and premises in the counties of Wellington and Grey, where horses had been destroyed for glanders during the last two years, and found the animals on these premises to be apparently free from disease.

During this time I have visited several places, where there was reported to be suspicious cases of glanders, and found the animals to be suffering from other causes.

In the absence of Dr. Stork, I have visited the Toronto market, inspected the stock, and looked after the disinfecting of any cars arriving from diseased districts.

All of which was duly reported to the department.

I have the honour to be, sir,

Your obedient servant,

WILLIAM STUBBS,

*Inspector.*

The Veterinary Director General,  
Ottawa.

J. H. TENNENT, V.S.

LONDON, March 31, 1906.

SIR,—I have the honour to submit to you this, my report for the period between November 1, 1905, and March 31, 1906.

#### TUBERCULOSIS.

During the time I have tested with tuberculin eighteen head of pure bred cattle for export to the United States, one of which reacted.

#### SHEEP SCAB.

With Dr. D. Henderson I visited sixty-six farms in the counties of Middlesex, Lambton and Kent, on which sheep scab existed during last year. The sheep on each of these farms had been dipped twice with lime and sulphur dip, and with one exception the flocks were free from the disease. During the month of January as directed by the Veterinary Director General, we visited three farms in the township of Metcalfe, when we found each flock affected with sheep scab, all of which have since been dipped in lime and sulphur dip.

#### CLEANING AND DISINFECTING CARS.

I have inspected the cleaning and disinfecting of fifty-five cars which carried live hogs from the quarantined district.

#### GLANDERS.

With Dr. Geo. W. Orchard, I visited Strood, in the county of Perth, where an outbreak of glanders existed. Total number of horses destroyed, forty-one, seven of



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which were destroyed on clinical symptoms alone, and thirty-four after being tested with mallein. We examined a number of other horses clinically, in the neighbourhood, in most of which cases the suspicious symptoms were due to distemper.

I have the honour to be, sir,

Your obedient servant,

J. H. TENNENT,

*Inspector.*

The Veterinary Director General,  
Ottawa.

W. W. STORK, V.S.

BRAMPTON, March 31, 1906.

SIR,—I have the honour to submit my report as inspector stationed at Toronto, dealing with the period between November 1, 1905, and March 31, 1906.

I have spent a large portion of the time in and around the city of Toronto visiting regularly the different stock yards, inspecting stock and supervising the cleansing and disinfecting of cars belonging to the different railway companies.

Toronto having become of late the distributing centre for large numbers of horses, the almost daily shipments coming to the two large sales stables, require the expenditure of considerable time in order to inspect the condition of the incoming stock, and I have to report that the general health and condition of the animals shipped to Toronto has been exceedingly good.

During the past months numerous Ontario horses in transit to Manitoba and the Territories have been unloaded at Toronto railway yards for feeding and resting purposes, these horses being of good quality and in a thrifty and healthy condition.

#### TESTING EXPORT CATTLE.

Since November 1, 1905, I have tested with tuberculin 27 head of cattle about to be exported to the United States.

#### MANGE.

The only case of mange in horses coming to my notice is at present quarantined and being treated successfully.

#### GLANDERS.

During the period covered by this report I have been called upon to make several investigations where glanders was reported to exist, but in only 3 cases did I find it necessary to order the destruction of animals as being infected with the malady, two of these being isolated cases in Toronto and one in the county of Northumberland. The number of animals tested and the number condemned is as follows :—

Number tested.. . . .	8
Number condemned and destroyed.. . . .	3

The carcasses of those destroyed were disposed of in the regulation manner and the premises subjected to thorough disinfection.

#### HOG CHOLERA.

Hogs in this district at least, have been particularly free from disease. During the period of this report not a single case of cholera making its appearance.



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## SHEEP SCAB.

During the month of March a consignment of sheep and lambs was detected in Toronto market suffering from scab, the animals were quarantined and slaughtered under inspection, the premises cleansed and disinfected.

These animals were traced to locality from whence they came, all contact animals quarantined and all necessary precautions taken.

I have the honour to be, sir,  
Your obedient servant,

The Veterinary Director General,  
Ottawa.

W. W. STORK.  
*Inspector.*

G. W. HIGGINSON, V.S.

ROCKLAND, March 31, 1906.

SIR,—I have the honour to submit to you a report of work done by me from November 1, 1905, till March 31, 1906.

Cattle tested with tuberculin for export, 182, 7 of which reacted.

Cattle tested with tuberculin not for export, 112, 9 of which reacted.

Ear-marked five head of cattle, which were tested by other inspectors. Three at Williamstown, two at Hudson Heights.

## GLANDERS.

Have submitted to mallein test 46 head of horses, 15 of which reacted and were destroyed. Ten of these horses were tested the second time, four of which reacted to second test.

## MANGE IN HORSES.

Have put under quarantine and ordered treatment of eight head of horses affected with mange.

I have the honour to be, sir,  
Your obedient servant,

The Veterinary Director General,  
Ottawa.

GEORGE W. HIGGINSON.  
*Inspector.*

M. B. PERDUE, V.S.

CHATHAM, ONT., March 31, 1906.

SIR,—In accordance with instructions contained in your letter of March 29, I have the honour to submit following, my report for the period between November 1, 1905, and March 31, 1906:—

## HOG CHOLERA.

There have been four outbreaks involving the slaughter of 54 hogs. Two of these outbreaks occurred in Essex county, one in Wentworth county, and one in the city of Guelph.



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There have been 41,262 hogs inspected for shipment, making 425 shipments from the quarantined district.

During this period I have tested two head of cattle for export purposes.

I have the honour to be, sir,

Your obedient servant,

M. B. PERDUE.

*Inspector.*

The Veterinary Director General,  
Ottawa.

G. W. ORCHARD, V.S.

OTTAWA, March 31, 1906.

SIR,—I submit below a report of work performed by me since October 31, 1905, to date. During that period I have tested with mallein 190 horses, of which number sixty-seven reacted and were destroyed. At Central Experimental Farm I tested nine steers, none of which reacted and four cows which did not react.

At Huntingdon, Geo. W. Higginson, V.S., and myself tested 138 Holstein Friesien cattle for export to South Africa, three reacted and were earmarked.

I also visited Iroquois and earmarked a cow which reacted in the test conducted by Dr. Hawarth.

I visited several farms in vicinity of Vankleek Hill, on one of which I found mange, quarantined farm and ordered treatment, visited a farm under quarantine for sheep scab at Cataragui, and finding everything in good health recommended release from quarantine.

Besides this above I have made a great many examinations of horses in vicinity of Ottawa for clinical symptoms of glanders, and also visited places in which affected horses have been stabled and saw that the work of cleansing and disinfection had been thoroughly carried out.

Have also been able to visit the ports of Windsor and Sarnia several times during this period and beg leave to report that the work there is being carried on without the former difficulties encountered from the railway officials.

I have the honour to be, sir.

Your obedient servant, .

GEO. W. ORCHARD.

*Inspector.*

The Veterinary Director General,  
Ottawa.

A. BROWN, V.S.

SARNIA, March 31, 1906.

SIR,—I have the honour to submit my report of work done for the Department of Agriculture from November 1, 1905, until March 31, 1906.

The domestic animals in this locality during the past six months have been generally healthy.



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The following animals and cars have been inspected by me during the past five months.

*For Import—*

Cattle.. . . .	68
Horses.. . . .	68
Sheep.. . . .	704
Hogs.... .	134
Buffaloes.. . . .	2

I returned twenty-one cattle and two Buffaloes, the cattle because not tested by a proper authority, and the buffalo because I was unable to test them with tuberculin. I also returned eight hogs because they were unaccompanied with proper health certificates.

Number of cars inspected containing hogs at G. T. R. Station.	886
Number found in unsatisfactory condition.. . . .	20
Number of cars inspected containing hogs at P. M. Station..	412
Number found in unsatisfactory condition.. . . .	14

The cars and stock coming from the United States going through Canada in bond, have shown a marked improvement regarding loading and cleanliness during the past six months.

I have the honour to be, sir,  
Your obedient servant,

The Veterinary Director General,  
Ottawa.

ARTHUR BROWN,  
*Inspector.*

F. A. JONES, V.S.

WINDSOR, ONT., March 31, 1906.

SIR,—I have the honour to submit my report of stock inspected at Windsor quarantine station from November 1, 1905, to March 31, 1906.

There have been no diseased animals in quarantine, other animals requiring inspection were in a healthy condition.

The following is a statement of animals received into quarantine, also stock requiring inspection :—

*For import—*

Horses.. . . .	28
Cattle.. . . .	53
Hogs.. . . .	6

*For export—*

Sheep.. . . .	354
Cattle.. . . .	53

Inspection at Detroit stock yards for admittance in bond for immediate slaughter :—

Hogs.. . . .	6,699
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I have the honour to be, sir,  
Your obedient servant,

The Veterinary Director General,  
Ottawa.

F. A. JONES,  
*Inspector.*



SESSIONAL PAPER No. 15a

M. PHILPS, V.S.

BRIDGEBURG, ONT., March 31, 1906.

SIR,—I have the honour to submit herewith as requested the report of work done by me from November 1, 1905, until March 31, 1906. The exports were as follows :—

Lambs and sheep.. . . .	55,888 to East Buffalo.
“ .. .	973 to England and Scotland.
Cattle. . . . .	257 to England and Scotland.

Imports were as follows :—

Hogs.. . . .	21,745
Sheep.. . . .	39
Cattle.. . . .	2

I have the honour to be, sir,  
Your obedient servant,

M. PHILPS,  
*Inspector.*

The Veterinary Director General,  
Ottawa.

W. LAWSON, V.S.

DUNDAS, March 31, 1906.

SIR,—I have the honour to submit herewith report of work performed by me during the period from my engagement on November 23, 1905, to March 31, 1906. According to your instructions I reported for duty on November 24, and received directions from you as to my future work. I returned to Dundas on the 25th and made preparations to leave for the Pacific coast. I arrived in company with Dr. Moore at Vancouver on December 4, and assisted in testing horses with mallein. On December 10, I was instructed to proceed to the Chilliwack district, where an outbreak of hog cholera had been reported. I killed 109 affected and contact hogs and also tested 5 horses for glanders.

On December 22, 1905, I returned to Vancouver and assisted in controlling the outbreak of glanders there. I returned to Chilliwack again on January 11, as other cases of hog cholera were reported. I found a small outbreak and destroyed 45 contact hogs, returning to Vancouver on January 19, and was here engaged in the work in connection with glanders until March 13 when I was called to Ottawa.

My work here has been confined to visiting quarantined premises to ascertain if disinfection had been carried out according to regulations. I investigated a reported outbreak of hog cholera, which proved not to be a disease of a contagious nature, but caused by dietetic errors.

I have the honour to be, sir,  
Your obedient servant,

WM. LAWSON.  
*Inspector.*

The Veterinary Director General,  
Ottawa.



5-6 EDWARD VII., A. 1906

J. R. THORNE, V.S.

WALLACEBURG, ONT., March 31, 1906.

SIR,—In pursuance of your circular of March 29, 1906, I beg to report as follows on the work done between the first day of November, 1905, and March 31, 1906:—

During the period above named there have been no cases of hog cholera or swine plague; on December 26, 1905, I inspected premises in the Gore of the township of Chatham, in the county of Kent, which had been under quarantine for hog cholera, and, finding that the premises had been properly disinfected, I advised the raising of the quarantine.

I have inspected twenty shipments, comprising 2,450 hogs, for immediate slaughter at the packing houses and found them all in a healthy condition.

I have the honour to be, sir,

Your obedient servant,

J. R. THORNE.

*Inspector.*

The Veterinary Director General,  
Ottawa.

J. KIME, JR., V.S.

CHATHAM, March 31, 1906.

SIR,—I have the honour to submit my report of inspection from November 1, 1905, to March 31, 1906.

I have inspected twelve cars of hogs for shipment. The total number of hogs shipped being 960.

Yours truly,

JOSEPH KIME, JR.

*Inspector.*

The Veterinary Director General,  
Ottawa.

W. B. ROWE, V.S.

BLENHEIM, ONT., March 31, 1906.

SIR,—I have the honour to submit my report of work done for the department from November 1, 1905, to March 31, 1906.

During this period I inspected at various shipping points in the quarantined district 79 cars containing 5,738 fat hogs for immediate slaughter and consigned to various packing houses.

I have the honour to be, sir,

Your obedient servant,

W. B. ROWE,

*Inspector.*

The Veterinary Director General,  
Ottawa.



SESSIONAL PAPER No. 15a

D. HENDERSON, V.S.

GLENCOE, March 31, 1906.

SIR,—I have the honour to report, that in pursuance of your directions, on or about December 12, 1905, Dr. J. H. Tennent, veterinary inspector of London, and myself, made a joint inspection of all the farms that were quarantined for sheep scab, in the counties of Middlesex, Kent and Lambton. We made a thorough investigation and found sheep scab among three flocks.

We quarantined the respective farms, and ordered the sheep to be thoroughly treated in lime and sulphur dip.

I afterwards superintended the dipping of sheep on two occasions.

I have the honour to be, sir,

Your obedient servant,

The Veterinary Director General,  
Ottawa.

D. HENDERSON,  
*Inspector.*

T. E. WATSON, V.S.

NIAGARA FALLS SOUTH, ONT., March 31, 1906.

SIR,—I have the honour to submit to you a report of animals inspected by me during the previous five months ending March 31, 1906:—

Horses....	59
Mules..	8
Cattle....	6
Sheep....	4

All of which were in good condition and found to be healthy.

I have the honour to be, sir,

Your obedient servant,

The Veterinary Director General,  
Ottawa.

T. E. WATSON.  
*Inspector.*

D. McALPINE, D.V.S.

BROCKVILLE, ONT., March 31, 1906.

SIR,—During the five months ending March 31, I have issued certificates for the following animals in export:—Thirty-seven head of cattle, one sheep, one hog, and two calves.

On February 13, there was reported at my office, a horse suffering in the vicinity of Algonquin, with supposed mange, which on investigation proved to be a skin trouble of an unctagious character, due to the filthy condition of the premises.

I have the honour to be, sir,

Your obedient servant,

The Veterinary Director General,  
Ottawa.

D. McALPINE,  
*Inspector.*



5-6 EDWARD VII., A. 1906

J. B. HOLLINGSWORTH, D.V.S.

OTTAWA, ONT., March 31, 1906.

SIR,—I beg to submit herewith my report from November 1, 1905, to March 31, 1906.

Instructed to go to Shawville, Que., suspected glanders, I tested horse with mallein and got no reaction.

I also assisted Dr. Moore in dealing with an outbreak of glanders in Ottawa. I have also inspected cars which had contained live hogs for immediate slaughter and found cars had been properly cleaned and disinfected.

I am pleased to state that diseases of a contagious nature in this vicinity are very few.

I have the honour to be, sir,

Your obedient servant,

J. B. HOLLINGSWORTH,

*Inspector.*

The Veterinary Director General,  
Ottawa.

G. H. BELAIRE, V.S.

PEMBROKE, March 31, 1906.

SIR,—According to instructions, I have the honour to submit to you a report of my work done during the period between November 1, 1905 and March 31, 1906.

On November 27, an outbreak of glanders was reported in the township of Chichester, Que. Acting on instructions, I visited that place and after a careful examination tested three horses with mallein, none of which reacted. The cause of the suspected glanders was a brown mare showing a slight frothy discharge from nostrils due to heaves in the chronic form.

I have the honour to be, sir,

Your obedient servant,

GEO. H. BELAIRE.

*Inspector.*

The Veterinary Director General,  
Ottawa.

WILLIAM C. MCGUIRE, D.V.S.

CORNWALL, ONT., March, 31, 1906.

SIR,—I have the honour to submit my annual report for the six months ended March 31, 1906.

I have submitted to the tuberculin test during this time, thirty-three head of cattle of which three reacted. The health of animals in this district has been very good.

I have the honour to be, sir,

Your obedient servant,

W. C. MCGUIRE,

*Inspector.*

The Veterinary Director General,  
Ottawa.



SESSIONAL PAPER No. 15a

D. McKERCHER, V.S.

PETERBOROUGH, March 31, 1906.

SIR,—I have the honour to make report from November 1 till March 31, as follows:—

I have made an examination of seven cars of hogs consigned to Peterborough.  
I have had no contagious diseases during this period.

I have the honour to be, sir,  
Your obedient servant,

D. McKERCHER,  
*Inspector.*

The Veterinary Director General,  
Ottawa.

J. H. GEORGE, V.S.

INGERSOLL, ONT., March 31, 1906.

SIR,—Reporting as to the health of animals in this district, I am pleased to state we have not suffered from an outbreak of any contagious disease for the past year. I had two cases of cerebrospinal meningitis on a farm near Avon in Middlesex county. In my opinion the disease was caused by grasses harvested from low lying and undrained lands subject to water overflows, spring and fall.

I have tested forty-eight horses for glanders, those horses were purchased by parties in Vancouver, and were subjected to the mallein test and not one showed the slightest taint of the disease. Showing that the western buyers are alive as to protection.

In my opinion the Health of Animals Branch is doing a good work in strictly enforcing the quarantine regulations.

I have the honour to be, sir,  
Your obedient servant,

J. H. GEORGE,  
*Inspector.*

The Veterinary Director General,  
Ottawa.

E. S. ROGERS, V.S.

SAULT STE. MARIE, March 31, 1906.

SIR,—I have the honour to submit my report for the period between November 1, 1905, and March 31, 1906.

Of contagious diseases there has been none with the exception of typhoid influenza among the horses. However, it does not seem to be as prevalent as in former years.

Importations from across the line are very light at this point, there having been only two cattle imported at this point during the last four months.

I have the honour to be, sir,  
Your obedient servant,

E. S. ROGERS,  
*Inspector.*

The Veterinary Director General,  
Ottawa.



5-6 EDWARD VII., A. 1908

H. J. LUNDY, V.S.

EMO, ONT., March 31, 1906.

SIR,—There have been two head of cattle passed into this district to both of which applied the tuberculin test on and found them free from contagious disease.

This is all the stock which has passed through up to March 31.

I have the honour to be, sir,  
Your obedient servant,

H. J. LUNDY,  
*Inspector.*

The Veterinary Director General,  
Ottawa.

C. D. MCGILVRAY, M.D.V.

WINNIPEG, MAN., March 31, 1906.

SIR,—I have the honour to submit herewith report on control work done in connection with the contagious diseases of animals for a period of five months extending from November 1, 1905, to March 31, 1906, inclusive.

## GLANDERS.

I have during the above period submitted to a first mallein test 328 animals (consisting of 302 horses and 26 mules) of which it was necessary to slaughter 138 animals (112 horses and 26 mules) on account of reacting typically to the test. Out of this number slaughtered 61 were showing clinical symptoms of glanders, the remainder 77 were contact infected animals which reacted typically to the test. Six horses were submitted to a second mallein test, of which one was slaughtered as result of reacting typically to a second test, it had also developed clinical symptoms.

## MANGE OF HORSES.

No new outbreak of mange has been dealt with by me during the above period. However have still six horses under quarantine from last year. This disease is now apparently well under control in Manitoba.

## TUBERCULOSIS.

I have submitted to the tuberculin test three head of pure bred cattle for export to the United States, these were healthy and did not react to the test. Seven head of pure bred cattle imported from the United States were submitted to the tuberculin test, four of which reacted to the test.

The health of animals in general throughout the province of Manitoba has been good during the past winter.

I have the honour to be, sir,  
Your obedient servant,

C. D. MCGILVRAY,  
*Inspector.*

The Veterinary Director General,  
Ottawa.



SESSIONAL PAPER No. 15a

J. P. MOLLOY, M.D.V.

MORRIS, MAN., March 31, 1906.

SIR.—I have the honour to report that beginning November 1, 1905, and ending March 31, 1906, that I have submitted to the mallein test 330 horses for a first time, 28 horses for a second time, 2 for a third time.

Eighty-nine horses were destroyed as a result of a first test, none were destroyed as a result of a second test, and two were destroyed on December 11 as a result of having reacted a third time.

Forty one of the 89 were clinical, and the remainder contact cases.

Nine of the 28 tested a second time were first tested prior to November 1, 1905, as were also the two tested a third time.

## MANGE.

Twenty-four horses inspected and quarantined for mange, the property of two different parties, and are still in quarantine.

I have the honour to be, sir,

Your obedient servant,

J. P. MOLLOY,  
*Inspector.*

The Veterinary Director General,  
Ottawa,

C. LITTLE, V.S.

WINNIPEG, March 31, 1906.

SIR,—I have the honour to submit to you my report of animals inspected from November 1, 1905, to March 31, 1906.

Imported from the United States as follows:—

Horses.....	2,420
Mules.....	105
Cattle.....	1,402
Sheep... ..	10

## GLANDERS.

I have examined thirteen horses for glanders, tested ten, one of which I destroyed. The three others I destroyed being clinical.

## TUBERCULOSIS.

I tested two pure-bred bulls being exported to United States and found them healthy.

I have the honour to be, sir,

Your obedient servant,

CHAS. LITTLE.  
*Inspector.*

The Veterinary Director General,  
Ottawa.



P. A. ROBINSON, V.S.

EMERSON, March 31, 1906.

SIR,—As requested, I beg to report the work done for past five months at this port. During that time I have inspected 465 horses, 175 cattle, four sheep and five swine belonging to settlers. Also 315 horses, 18 cattle on which fees have been collected.

I have the honour to be, sir,  
Your obedient servant,  
P. A. ROBINSON,  
*Inspector.*

The Veterinary Director General,  
Ottawa.

W. LESLIE, V. S.

MELITA, March 31, 1906.

SIR,—In compliance with your request, I submit my report up to and including March 31, 1906, as follows:—

Horses and cattle passed customs at the port of Melita—	
Horses....	55
Cattle....	7

Of the above, twenty-four horses and seven cattle were settlers effects and thirty-one horses were imported for sale.

I have had two outbreaks of glanders since my October report. Thirteen were given the mallein test, and the reactors, seven in number, were destroyed.

I have the honour to be, sir,  
Your obedient servant,  
W. LESLIE,  
*Inspector.*

The Veterinary Director General,  
Ottawa.

W. LITTLE, V.S.

BOISSEVAIN, March 31, 1906.

SIR,—I have the honour to submit the following report of animals inspected by me at the customs ports of Deloraine and Killarney, Man., during the months beginning November 1, 1905, and ending March 31, 1906:—

Animals inspected at Deloraine—	
Horses, 174; mules, 3; cattle 107.	
Animals inspected at Killarney—	
Horses, 203; mules, 16; cattle 142; sheep, 6.	

All the above were entered as settlers' effects.

Of the above, three horses and four cattle entered for sale. Nine horses were entered for breeding purposes, and 71 horses and 14 mules were entered for railroad construction work. The balance of all animals were entered as settlers' effects.

I have the honour to be, sir,  
Your obedient servant,  
W. LITTLE,  
*Inspector.*

The Veterinary Director General,  
Ottawa.



SESSIONAL PAPER No. 15a

J. A. STEVENSON, V.S.

CARMAN, MAN., March 31, 1906.

SIR,—According to instructions received in letter dated March 29, I herewith send report from November 1, till March 31, 1906.

Everything has been fairly quiet in my district. There have been three reports of glanders sent in which have been dealt with from Winnipeg, the outcome I do not know.

I have the honour to be, sir,  
Your obedient servant,

The Veterinary Director General,  
Ottawa.

JAS. A. STEVENSON,  
*Inspector.*

REGINA, March 31, 1906.

SIR,—I have the honour to submit, herewith, my annual report for the five months ended March 31, 1906, on the work performed in the provinces of Alberta and Saskatchewan, for the Health of Animals Branch of the Department of Agriculture, by the veterinary staff under my directions, together with the reports of the undermentioned inspectors, as follows :—

General report, Inspector Burnett, Vet. Surgeon, R.N.W.M. Police.

Battleford District, Vet. Staff-Sergt. Meakings.

Calgary District, Vet. Staff-Sergt. McVeigh, Dr. P. K. Walters, V.S.

Edmonton District, Vet. Staff-Sergt. Sweetapple.

Lethbridge District, Vet. Staff-Sergt. Gallivan, Vet. Staff-Sergt. Johnston, Vet. Staff-Sergt. Greenwood.

Maple Creek District, Vet. Staff-Sergt. Littlehales, Vet. Staff-Sergt. Dennis, Dr. Hargrave, V.S.

Macleod District, Vet. Staff-Sergt. White, Vet. Staff-Sergt. Douglas, Dr. Warnock, M.R.C.V.S.

Prince Albert District, Vet. Staff-Sergt. Mountford.

Regina District, Vet. Staff-Sergt. Grey, Vet. Staff-Sergt. Pinhorn, Vet. Staff-Sergt. Mitchell, Vet. Staff-Sergt. Ayre, Vet. Staff-Sergt. Olsen,

The veterinary staff employed is as follows :—

Veterinary surgeons, members of R.N.W.M. Police . . . . .	17
“ “ civil practitioners . . . . .	3

In addition to the above, civil practitioners have been temporarily employed at Regina, Battleford, and Calgary, where the permanent staff was unable to cope with the work. The staff is distributed as follows :—

At ports of entry, 6, viz.: North Portal, Wood Mountain, Willow Creek, Pendant d'Oreille, Coutts, and Twin Lakes.

Regina District . . . . .	5
Prince Albert . . . . .	1
Battleford . . . . .	1
Edmonton . . . . .	1
Calgary . . . . .	2
Macleod . . . . .	1
Lethbridge . . . . .	1
Maple Creek . . . . .	2



5-6 EDWARD VII., A. 1906

The area of the two provinces is so great, and the importation of stock so heavy, that I have found it impossible to meet and deal with all outbreaks of disease in an effective manner. I realize that every report should be investigated without delay and prompt action taken, but with the limited veterinary staff, this was not possible.

Every member has worked incessantly, and some I know have been despondent because they could not cope with their work.

In my opinion the staff must be largely increased. If veterinary surgeons of the proper stamp cannot be secured under the present arrangements for pay, &c., then such a substantial increase of pay should be given as will secure their services.

I need not dwell on the importance of eradicating disease in the new provinces, nor of the difficulties we encounter, as you are quite familiar with the conditions.

As in my previous report, the chief contagious and infectious diseases with which we have had to deal are: In horses, glanders and *maladie du coît*; and in cattle, mange.

#### GLANDERS.

Conditions have not changed with regard to this disease. We are still fighting in every portion of the new provinces, but principally in Southeastern and Central Saskatchewan.

The ignorance of horse owners is lamentable. Livery stable owners have kept in their stables horses in advanced stages of glanders, spreading the disease broadcast throughout their districts without even a suspicion entering their heads that the disease might be glanders, although they must have known that glanders was in the country. The owner of a large band of horses acknowledged to having the disease in his band for years, and continued to sell his horses which were taken far and wide.

Several convictions have been secured, but more convictions and severer penalties will have to be inflicted until the owners of horses waken up to the danger.

#### MALADIE DU COÎT.

Our inspectors are vigorously combating this disease which is found only in Southern Alberta, with one exception in Saskatchewan at Rush Lake.

#### MANGE.

The compulsory dipping of last season has been of great benefit.

Isolated cases of mange have been found in all the area covered by the dipping order, but most of the cases have occurred in that portion of the Calgary district where owners opposed dipping or dipped carelessly.

By your authority, range riders were employed during the winter months to ride the range and locate mangy animals. The services of these riders have been valuable.

Is a compulsory dipping order to be enforced this year? This is a question which is being asked. Opinion is divided. The benefits which have been conferred on the cattle industry by the compulsory dipping of 1904 and 1905 are acknowledged by all. Many say that as their herds are now clean, why then should they dip. Others say that although conditions have much improved, still as there are isolated cases of mange here and there, compulsory dipping is necessary to keep the disease in check and that if dipping is neglected, in a year or two conditions will be as they were in 1903-4.

It is a question of great importance, and I trust that a correct solution will be reached on the occasion of your next visit to the west.

I am of opinion that the stock growers recognize that you are anxious to do what is best for their interests.

They recognize that the Department of Agriculture has spent money freely and that the result has been most advantageous.

I have to thank the veterinary staff for their unflagging zeal in carrying on their duties.



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I wish also to thank you for your support and encouragement given to the veterinary staff in carrying out their very important duties.

I have the honour to be, sir,

Your obedient servant,

A. BOWEN PERRY,  
*Commissioner.*

The Veterinary Director General,  
Ottawa,

J. F. BURNETT, V.S.

REGINA, March 31, 1906.

SIR,—I have the honour to submit herewith my report for the Department of Agriculture for the five months ending March 31, together with those of the following inspectors.

Sweetapple, C. H. H., Fort Saskatchewan.  
Mitchell, W., North Portal.  
Mountford, J. J., Prince Albert.  
Johnston, H. J., Coutts.  
White, S. A. K., Macleod.  
Gray, F., Regina.  
McVeigh, C. H., Calgary.  
Gallivan, M. V., Lethbridge.  
Littlehales, J. E., Maple Creek.  
Douglas, A. R., Twin Lakes.  
Greenwood, E. S., Wild Horse.  
Dennis, A. E., Willow Creek.  
Pinhorn, G., Regina.

All of the Royal North West Mounted Police.

Hargrave, J. C., Medicine Hat.  
Warnock, D., Pincher Creek.  
Walters, P. K., Okotoks.

Civil practitioners.

The work of the department has progressed in as satisfactory a manner as could be expected with the limited number of inspectors employed, the great drawback being that there are not enough to permit of every case reported being promptly attended to. This country is filling up so rapidly, that naturally the demand for the services of veterinary inspectors is increasing. This time last year, Staff Sergeants Mitchell, Busselle, Olsen and Dennis were working out of Regina, while at present there are only two, Staff-Sergeants Gray and Pinhorn. Staff-Sergeant Dennis had to be called in on account of his health, and Staff-Sergeant Busselle is in hospital with no immediate prospect of his being returned to duty.

Glanders the most widespread and prevalent disease we have to contend with is occupying the greater part of our time and attention, and while certain districts appear to have got rid of it, there are cases being continually reported from some of the most thickly settled parts of the country. In the country traversed by the Soo line, inspectors have been working for months, and no sooner do we begin to think that we have cleaned it up than a fresh outbreak is reported, this may be accounted



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for from the fact that a large number of American horses have been taken into that country.

A very serious outbreak of glanders occurred among the horses of 'C' Division, Royal Northwest Mounted Police, Battleford, all horses belonging to the division were tested with the result that it was found necessary to destroy eleven. It is impossible to say where the first animal infected contracted the disease, as the horses were sent to that post from all parts of the country, and as many of them were used in patrolling, they were put in all kinds and conditions of stables. Another outbreak occurred among the police horses stationed in the Yorkton district, a large percentage of which it was found necessary to destroy, and while the testing of these horses was being carried out a number of other cases were brought to the notice of the inspector employed, it being impossible now to say when he will be through. The outbreak cannot be traced to its source, but I am of the opinion that the infection was carried into that district by horses used on the construction of the Canadian Northern Railway.

#### MALADIE DU COIT,

Since the rendering of the last annual report a number of new cases of this disease have been discovered by our inspectors, one lot of infected animals being in a bunch brought from the States. This disease has temporarily injured the horse breeding interests of the west, I say temporarily for I believe it will be the means of doing away with a good deal of haphazard breeding. Owners will keep smaller bunches, will keep their horses in properly fenced pastures, and when they have to go to this expense, they will want a better class of animal. Owners of mares are complaining that they cannot get their mares bred as the owners of stallions refuse them unless they can furnish a certificate of health, while veterinary surgeons refuse to give such certificates, as it is not always possible to say whether an animal is infected or not, the result will be that in future the business will be carried on with more intelligence and care.

#### HORSE MANGE.

This disease appears to be well in hand at present, no serious outbreak having been reported since last report. The cases now brought to our notice, are principally among farmers horses where the disease is easily controlled and there is little danger of it spreading.

#### CATTLE MANGE.

Since the expiration of the time in which the compulsory dipping order was enforced, a number of cases have been reported from certain districts, while in other parts the affection appears to have entirely disappeared. On the whole, an immense improvement in the condition of the range is noticeable, and so far as I can learn deaths during the winter have been practically nil.

I have the honour to be, sir,

Your obedient servant,

JNO. F. BURNETT.

*Inspector.*

The Veterinary Director General,  
Ottawa.



SESSIONAL PAPER No. 15a

C. H. SWEETAPPLE, V.S.

FORT SASKATCHEWAN, March 31, 1906.

SIR,—I have the honour to forward the following annual report of services performed for the Department of Agriculture for the year ending March 31, 1906.

Of the contagious and infectious diseases which have occurred most frequently in the past, glanders has prevailed most extensively and in almost every locality, but I am now able to report that only two outbreaks have come to my notice, and neither of these could be traced to localities where this disease had previously occurred.

Fifty-six mules, which were at work on the Canadian Northern Railway construction, were tested for glanders in the latter part of November, 1905, and of these two reacted and were destroyed, presenting no suspicious symptoms of glanders.

Small outbreaks of glanders also occurred at Morningside and Ponoka. These were promptly dealt with in accordance with the regulations.

I examined about seventy-five head of horses which were supposed to have come from locality in Montana, where *maladie du coit* was supposed to exist, but none of these animals presented any symptoms of this disease.

Mange has made its appearance near Ponoka, but as it is among a small number of cattle it will no doubt be stamped out at once.

Only one case of tuberculosis has come under my notice and the disease was in an advanced stage so animal was destroyed by the owner on being informed of the nature of the disease, and the condition of the animal which could not live but short time.

Black quarter has made its appearance in almost every locality and has proved a very serious loss to many of the settlers.

Vaccination is becoming quite general among the more intelligent settlers, but there are still a few who resort to the old method of mutilating their animals as a preventive.

Influenza has been quite general in this district but losses have been slight as it has usually been of a benign character.

I have the honour to be, sir,

Your obedient servant.

The Veterinary Director General,  
Ottawa.

C. H. H. SWEETAPPLE,  
*Veterinary Staff-Sergt.*

W. MITCHELL, V.S.

NORTH PORTAL, March 31, 1906.

SIR,—I have the honour, in compliance with your instructions, to forward this report of quarantine work performed at North Portal during the five months ending the 31st ulto.

And, obviously, at a boundary point like this, especially at this season of the year, the character of the work performed has consisted almost exclusively in inspecting incoming settlers' goods. Indeed to such an extent has this been the case during the interval in question that of a total of 6,166 horses inspected, only 577 were the property of others than actual settlers. And of these latter it might be remarked that, with the exception of a few stragglers brought across the line by adjacent Canadian residents for their own use, they consisted principally of aged workhorses of inferior quality from southern points brought in in carload lots of eighteen to twenty, and, with the exception of one lot consigned to Qu'Appelle, were consigned to Moosejaw and intermediate points on the 'Soo' line.



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Of mules, 353 animals were inspected and with scarcely an exception, consisted of settlers' stock.

Of cattle, a total of 1,962 animals were inspected and, with the exception of one carload of registered Herefords imported for breeding purposes, and one Holstein bull calf consigned by express to a Canadian purchaser, were exclusively settlers' stock.

In the case of sheep and swine, however, possibly less than a dozen each reached the international line, and these their owners elected to dispose of in Portal, North Dakota, at fair prices rather than incur the expenses incidental to quarantining, together with the subsequent express charges implied in forwarding them to their respective owners.

In conclusion this following brief summary of the work performed might be inserted:—

Horses.. . . .	6,166
Mules.. . . .	358
Cattle.. . . .	1,962
Sheep.. . . .	....
Swine.. . . .	....

I have the honour to be, sir,  
Your obedient servant,

The Veterinary Director General,  
Ottawa.

W. MITCHELL,  
*Veterinary Staff-Sergt.*

J. J. MOUNTFORD, V.S.

PRINCE ALBERT, March 31, 1906.

SIR,—I have the honour to submit the following report of the work done by me for the Department of Agriculture from November 1, 1905, until March 31, 1906.

I administered the mallein test to seventy-three head of horses, forty of these stood the test, thirty-three reacted to the test and were destroyed. Twenty head of horses were showing diagnostic symptoms of glanders, and were destroyed without being tested.

Eleven cases of mange in horses came to my notice, ten of the above have been treated successfully and released from quarantine. One is still isolated and under treatment.

I have the honour to be, sir,  
Your obedient servant,

The Veterinary Director General,  
Ottawa.

J. J. MOUNTFORD,  
*Veterinary Staff-Sergt.*

S. A. K. WHITE, V.S.

MACLEOD, March 31, 1906.

SIR,—I have the honour to forward the following report of services performed for the Department of Agriculture, from November 1, 1905, to March 31, 1906 :—

During the month of November I was stationed at Twin Lakes, examining import stock, and looking after the carrying out of the mange dipping order. I was laid off duty through sickness from November 30, 1905, to March 4, 1906 ; returning to



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Macleod upon recovery. My time has since been fully occupied, in investigating suspicious cases of contagious disease, and the inspection of animals for shipment, having examined 199 horses and 72 cattle for this purpose.

I have also destroyed three horses affected with glanders, and have detected a number of cases of mange, which were dealt with according to the regulations.

I have the honour to be, sir,

Your obedient servant.

S. A. K. WHITE.

*Veterinary Staff Sergt.*

The Veterinary Director General,  
Ottawa.

## A. R. DOUGLAS, D.V.S.

TWIN LAKES, ALTA., March 31, 1906.

SIR,—I have the honour to forward herewith the following report of services performed for the Department of Agriculture from November 1, 1905, to March 31, 1906 :—

During the month of November a great part of my time was taken up in connection with compulsory dipping operations, and clerical work.

Shipments of stock were frequent, which necessitated a considerable amount of travelling. I inspected 339 horses for shipment.

During December I tested three horses for glanders. One reacted and was destroyed. I also examined twenty-five horses and a band of cattle and found them free from disease.

I inspected 186 horses for shipment.

During January I quarantined three horses for mange, and also saw several cattle affected with that disease. I inspected and held for further test one mare suspected of being affected with glanders. I inspected 109 horses and fifty-eight cattle for shipment.

In February I tested thirty-four horses with mallein, of which six reacted and were destroyed. I inspected seventy-four head of horses and thirty-five cattle for shipment. On February 22 I was transferred to this detachment from Macleod, since which I have inspected 127 import horses.

In March I quarantined twelve horses as being affected with mange, and inspected seventy-nine horses and fifty-two cattle for shipment.

I have the honour to be, sir,

Your obedient servant,

A. R. DOUGLAS,

*Veterinary Staff Sergt.*

The Veterinary Director General,  
Ottawa.

## E. A. MEAKINGS, M.D.V.

BATTLEFORD, March 31, 1906.

SIR,—I have the honour to forward report of quarantine work performed by me from November 1, 1905, till March 31, 1906 :—



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I am pleased to say that almost all cases of mange previously reported have been successfully treated, but there are three fresh cases in this district at present; all are responding to treatment readily.

An outbreak of glanders I regret to say occurred in the police stables here, this was first noticed in the form of farcy buttons, all horses in the division were forthwith tested and a reaction followed, in a large majority these reactors were destroyed and stables were thoroughly disinfected. No other outbreaks have occurred with the exception of Paynton at which place five were destroyed, these, however, were reactors of long standing.

I am pleased to state that I find the settlers realize the seriousness of this disease and most of them report at once any suspicious symptoms that may be found.

I have the honour to be, sir,  
Your obedient servant,  
E. A. MEAKINGS,  
*Veterinary Staff Sergt.*

The Veterinary Director General,  
Ottawa.

J. E. LITTLEHALES, D.V.S.

MAPLE CREEK, March 31, 1906.

SIR,—I have the honour to submit my annual report of work performed for the Department of Agriculture from October 31, 1905, to March 31, 1906.

Number of miles travelled—

Train.. . . . .	1,090 and return
Trail.. . . . .	430 “

Stock inspected—

Horses imported.. . . . .	201
Cattle imported.. . . . .	291
Horses exported.. . . . .	356
Cattle.. . . . .	1,944

The horses and cattle exported were inspected at different points on the line, between Suffield, Alta., and Waldeck, Sask.

The above importations were inspected at Maple Creek until a veterinary inspector was stationed at Willow Creek port of entry.

GLANDERS.

Horses tested, 12; destroyed after reacting, 3; destroyed showing clinical symptoms, 3.

Glanders seems to be slightly on the increase, although it has not spread to any great extent yet, but cases turn up every now and again. Most of the cases have been among horses in the district north of Herbert.

MANGE.

There have been very few cases of mange reported among cattle during the year, what few that have been diseased have been promptly gathered and treated.

The Canadian Land and Ranch Company of Crane Lake had about fifteen diseased animals, but these have been treated and cured. There are several ranchers in the



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Skull Creek district who have had their cattle quarantined all winter on account of not complying properly with the dipping orders, these people have been ordered to dip their cattle this spring. I have inspected their cattle several times during the winter, but have found no cases of mange among them. Last year's dipping seems to have cleaned the country of mange very thoroughly, and most of the ranchers are anxious for the compulsory dipping again this year, in order to rid the country of the few remaining cases. This last winter has been an exceptionally good one and all cattle are in good health and condition. I have had no horse mange reported to me during the year.

The health of sheep in this district seems to be very satisfactory, as no disease has been reported during the year.

I have the honour to be, sir,

Your obedient servant,

The Veterinary Director General,  
Ottawa.

J. E. LITTLEHALES,  
*Veterinary Staff Sergt.*

A. E. DENNIS, V.S.

WILLOW CREEK, March 31, 1906.

SIR,—I have the honour to forward report on quarantine work done on Soo line and Souris line from Moosejaw round to Gainsborough from October 31, 1905, to March 11, 1906. In that time I tested about one hundred and eighty-five horses, out of that number, I destroyed thirty-two for glanders and quarantined quite a number of horses for mange. Especially south of the Soo line near the Hills. I only came across two cattle with mange and one of them died and the other one is isolated.

On March 11, left the Soo line for Regina. On March 25, left Regina for Maple Creek en route for Willow Creek and arrived here on March 29, 1906. I have not inspected any stock up to date, at this port of entry.

I have the honour to be, sir,

Your obedient servant,

The Veterinary Director General,  
Ottawa.

A. E. DENNIS,  
*Veterinary Staff Sergt.*

E. S. GREENWOOD, V.S.

PENDANT D'OREILLE, March 31, 1906.

SIR,—I have the honour to submit herewith my report of inspections at this port of entry together with a brief report of other work performed for the Department of Agriculture in the outlying district allotted to me for the five months ending March 31, 1906.

The number and classes of animals imported from the United States which have been inspected and allowed to enter at this port of entry as follows :—

Horses....	703
Cattle..	87



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## MANGE.

That part of the district set apart for me to work was a portion of the country coming under the compulsory dipping order of 1905. This compulsory dipping has had a decidedly good effect, having almost completely eradicated this disease in this district. Since the expiration of the compulsory dipping season, I have made numerous visits to the different ranchers of my district trying to locate if possible, any cases of mange, up to this time I have only found sixteen cases, the reports of which have been forwarded to you from time to time. Ranchers here seem to be fully aware of the seriousness of this disease, and give every assistance possible to stamp it out.

## GLANDERS.

During the last week in March while inspecting a bunch of horses belonging to a rancher in this district, I came across seven horses showing clinical symptoms of glanders. I have quarantined these and all contact animals, also horses on the adjoining ranch. All those horses will be subjected to the mallein test and disposed of according to the regulations. With the exception of this outbreak no other cases of glanders have appeared in this district.

## MALADIE DU COIT.

During the summer of 1905, this disease appeared on one of the ranches in this district, but I am pleased to say is now thought to be completely stamped out. During the past month I have inspected all the available mares, and have made arrangements for a close inspection of the entire herd.

With the exception of the above, no contagious disease has appeared among stock in the district.

I have the honour to be, sir,  
Your obedient servant,

E. S. GREENWOOD,  
*Veterinary Staff Sergt.*

The Veterinary Director General,  
Ottawa.

H. M. GRAY, M.D.V.

KAMSACK, SASK., March 31, 1906.

SIR,—I have the honour to herewith inclose report of work performed by me from November 1, to March 31, 1906.

The greater part of my time I have been employed in southern and northeastern Saskatchewan. The contagious disease most met with was glanders. A quite serious outbreak occurred at Stony Creek the end of January, which at the present time is well under control.

I have the honour to be, sir,  
Your obedient servant,

H. M. GRAY,  
*Veterinary Staff Sergt.*

The Veterinary Director General,  
Ottawa.



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H. J. JOHNSTON, V.S.

COUTTS, March 31, 1906.

SIR,—I have the honour to submit herewith my report of work done for the Department of Agriculture, from November 1, 1905, to March 31, 1906.

I am pleased to be able to state that, in this locality we are free from all diseases of a contagious or infectious character, not even a case of mange having been reported to me by any of the ranchers since dipping season closed last October,

## Number of animals imported:—

Horses.. . . . .	1,722
Mules.. . . . .	5
Cattle.. . . . .	385
Sheep.. . . . .	27
Swine.. . . . .	1
Total exports—	
Horses . . . . .	51
Cattle.. . . . .	1,308

I have the honour to be, sir,  
Your obedient servant,

H. J. JOHNSTON,  
*Veterinary Staff Sergt.*

The Veterinary Director General,  
Ottawa.

M. V. GALLIVAN, V.S.

LETHBRIDGE, ALTA., March 31, 1906.

SIR,—I have the honour to forward this my report of work done for the Department of Agriculture dealing with the period from November 1, 1905, to end of our year on March 31, 1906.

I have in that time examined for shipment 2,124 cattle, 18 mules and 549 horses. I found it necessary to reject thirty mares on account of *maladie du coit*, which reduces the number of horses shipped to 519. I have had to exercise extra care in examining mares on account of the prevalence of this disease. I therefore did not think it advisable to allow any mare to be shipped that exhibited the slightest symptom.

I have made a number of trips to different parts to attend to mares and stallions affected with the above disease, the worst and largest number of cases were found in and around Sterling, Alta. A grade Percheron stallion stood for service in Sterling last year and communicated the disease to a large number of mares. The mares served by this stallion during the season of 1904 seem to be in good health, it therefore seems that the stallion contracted the disease during the early part of last years breeding season. This stallion was slaughtered a few weeks ago on the premises of owner.

I have the honour to be, sir,  
Your obedient servant,

M. V. GALLIVAN,  
*Veterinary Staff Sergt.*

The Veterinary Director General,  
Ottawa.



N. P. OLSEN, V.S.

WOOD MOUNTAIN, March 31, 1906.

SIR,—I have the honour to submit the following report on quarantine work performed by me from November 1, 1905, to March 31, 1906 :—

During the first month of this period I was working in the Medicine Hat District, my duties being in connection with compulsory dipping of cattle in Dipping District No. 13. This, owing to unavoidable delays was not completed until the latter part of November.

About Decembepr 1, I took over the duties of veterinary staff-sergeant at this port of entry.

BOUNDARY INSPECTION.

Records kept in this office show the following animals entered here and inspected by ex-Staff-Sergt. Perry during December, 1905 :—

Horses.. . . .	19 head.
Cattle.. . . .	19 “

From December 1, 1905, to March 31, 1906, the following animals were inspected by me, passed as healthy and entered here :—

Horses.. . . .	25
Cattle.. . . .	1
Sheep.. . . .	7

GLANDERS.

I regret to report that this disease is prevalent in this locality. During the past winter I have destroyed fourteen affected horses, thirteen of these were when destroyed exhibiting clinical symptoms. At present a herd of range horses, comprising about 500 head are under quarantine near Willow Bunch, they will be subjected to the mallein test as soon as the squeezers and corrals now under construction on the quarantined premises are completed.

MANGE.

Dipping being optional in this district, last year no animals were treated. Mange appeared amongst the cattle in about fifty per cent of the herds during the winter, and was dealt with in accordance with the regulations relating to this disease. The stock being as a result of the excellent condition of the range and mild nature of the winter, in a vigorous state of health suffered very little from the disease.

No other diseases of a contagious or infectious nature have come under my observation.

I have the honour to be, sir,  
Your obedient servant,

The Veterinary Director General,  
Ottawa.

N. P. OLSEN,  
Veterinary Staff Sergt.

C. H. McVEIGH, V.S.

CALGARY, ALTA., March 31, 1906.

SIR,—I have the honour to submit herewith my report of work done for the Department of Agriculture for that portion of the year commencing November 1, 1905, ending March 31, 1906.



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Cattle mange has been almost eradicated by the compulsory mange dipping order. Scarcely any mange is reported from the district north of Calgary, but I am sorry to state it seems prevalent to some extent through the High River district. Arrangements are now being made to dip these cattle this spring. The total number of stock inspected for shipment are as follows :—

	Horses.	Cattle.
November, 1905.. . . . .	290	733
December, 1905.. . . . .	211	428
January, 1906 . . . . .	119	532
February, 1906.. . . . .	177	631
March, 1906.. . . . .	393	1,037
Total.. . . . .	1,190	3,361

Glanders is still to be found throughout this district, twenty-six horses have been destroyed during this period at a compensation value of \$1,865.99, twelve of these were destroyed by P. K. Walters, V.S., thirteen by C. H. McVeigh, V.S., and one by A. Hobbs, V.S.

I have the honour to be, sir,  
Your obedient servant,

The Veterinary Director General,  
Ottawa.

CHAS. H. McVEIGH,  
*Veterinary Staff Sergt.*

G. C. PINHORN, V.S.

ESTEVAN, March 31, 1906.

SIR,—I have the honour to report that since my arrival in the Estevan district, the following cases have been attended to by me:—

GLANDERS.	
Tested.. . . . .	118
Destroyed without test . . . . .	3
Reacted to test and destroyed.. . . . .	22
Reacted to test and held for retest by owner . . . . .	3
Held for retest on suspicion.. . . . .	37
No reaction . . . . .	53

MANGE.

Twenty-nine cases. Twenty-six of which are on one ranch. ' There are only a few isolated cases of mange in the district, but I regret to inform you that the disease of glanders is very prevalent. The poor sanitary conditions in many of the stables visited, and the lack of knowledge of the contagious character of the disease among some horse owners are not conducive to the stamping out of it. But by vigorous enforcement of the Contagious Diseases Act, I feel confident that the disease can eventually be controlled.

I have the honour to be, sir,  
Your obedient servant,

The Veterinary Director General,  
Ottawa.

GERALD C. PINHORN,  
*Veterinary Staff Sergt.*



MEDICINE HAT, March 31, 1906.

SIR,—I have the honour to submit, for your consideration, the following report for the period extending from November 1, 1905, to March 31, 1906.

The number and classes of animals inspected and passed for shipment are as follows:—

Horses.. . . . .	821
Cattle.. . . . .	716

A number of shipments from the district have been inspected by others during my absence. The total shipments for the period are more than double the above figures.

The number and classes of animals imported from the United States and inspected at Maple Creek are here given:—

Stallions.. . . . .	1
Mares.. . . . .	18
Geldings.. . . . .	15
Colts.. . . . .	4
<hr/>	
Total.. . . . .	38

GLANDERS.

The number of horses destroyed during the past five (5) months are six, two presented clinical symptoms, the balance were condemned on mallein test.

Horses tested and destroyed.. . . . .	4
Horses destroyed without testing.. . . . .	2
Suspicious cases examined only.. . . . .	6
Number now awaiting retest.. . . . .	1

The latter animal is one requested to be retested by your department.  
Average valuation of those destroyed, \$81.66⅔.

MALADIE DU COÏT.

Number of horses examined, 1,660; number destroyed, mares, 47; stallions, 5; total, 52. Average valuation, mares, \$78.72½; stallions, \$180.

Number detained in quarantine under suspicion, mares, 39; stallions, 5; total, 44.

Of the stallions destroyed, one was a registered horse and the balance grade.

Number of animals examined under the Animals Contagious Diseases Act, horses, 2,756.

Respectfully submitted.

I have the honour to be, sir,  
Your obedient servant,

J. C. HARGRAVE,  
*Inspector.*

The Veterinary Director General,  
Ottawa,



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D. WARNOCK, M.R.C.V.S.

PINCHER CREEK, March 31, 1906.

SIR,—I have the honour herewith to submit my report on work performed for the Department of Agriculture from November 1, 1905, to March 31, 1906.

## MALADIE DU COÏT.

During November I dealt with some cases of *maladie du coït* among mares in the Cardston and Mountain View districts. In nearly every case I found that the affected animal had come originally and within the past few years, from the United States.

Early in January a farmer in the Porcupine Hills informed me that a mare, his property, had died, and from the symptoms described I suspected *maladie du coït*. Learning that this mare had been on the Pèigan reservation, and had been served by some Indian stallions, I reported to the officer commanding R.N.W.M. Police, Macleod, who forwarded my report to the acting Indian agent and at the request of the latter I examined some stallions the property of the Indian Department, and a stallion belonging to one of the Indians.

Finding two stallions exhibiting suspicious symptoms I quarantined these and, later, quarantined all mares and stallions on the reservation.

The Indian agent is arranging to have all mares and stallions gathered for examination early in April.

In February I made a second examination of about 150 mares, and finding thirty-two affected, valued and destroyed these. I also examined a number of mares the property of farmers in the Tongue Creek and Okotoks districts, and finding several clearly affected, valued and destroyed these. Other suspected mares are quarantined for re-examination.

The affected mares in these districts are principally animals purchased out of an infected herd within the past year or two. Some of the farmers have had a convincing experience of the virulent nature of this disease, as a number of mares either died after being broken and put to hard work, or became so weak as to be quite unfit for work purposes.

I have also examined and dealt with a number of mares in the Macleod and Porcupine Hills districts. Since the 1st of November I have destroyed forty-two (42) mares affected with *maladie du coït*.

## GLANDERS.

On December 3, I received instructions from the Veterinary Director General to proceed to Jaffray, B.C., to co-operate with Dr. Bell in dealing with an outbreak of glanders at that point.

After applying the mallein test we found twenty-four horses affected with glanders and destroyed these.

Later in December I tested twelve horses at Frank, Alberta, and finding three of these affected, destroyed them.

In November I destroyed a stallion at High River, showing clinical symptoms of glanders.

Since the 1st of November, 1905, I have destroyed twenty-eight (28) horses affected with glanders, of which number 24 were destroyed at Jaffray, B.C., and four in Alberta.

From November 1, 1905, to March 31, 1906, I made twenty-seven inspections of stock for shipment from Macleod, Pincher, Cowley and Frank stations on the Crow's Nest branch, Canadian Pacific Railway.

I have the honour to be, sir,

Your obedient servant.

The Veterinary Director General,  
Ottawa,

D. WARNOCK,  
*Inspector.*



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P. K. WALTERS, V.S.

CALGARY, March 31, 1906.

SIR,—I have the honour to submit my annual report for the Department of Agriculture, from November 1, 1905 to March 31, 1906.

In November, most of the ranchers in No. 12 district dipped their cattle for mange very satisfactorily. The ranchers and farmers who did not comply with the Compulsory Dipping Regulations were quarantined.

Where no mange was found in the cattle during the winter months, the quarantine was raised. Some cattle which were very mangy were dipped in oil with very good results, only two breaking out during the winter months out of forty-six head of cattle which were in a very bad state, being nearly raw all over before being dipped.

During December, numerous cattle were inspected for mange, and where mange was found, and the cattle dipped, the quarantine was subsequently raised. Also destroyed four horses for glanders in the Didsbury district.

During the month of January I quarantined two mares showing suspicious symptoms of *maladie du coït* in the High River and Sheep Creek district, which were destroyed by Drs. Warnock and Gallivan. Also inspected numerous cattle in this district for mange, and tested two horses for glanders.

During the month of February two horses were destroyed by me for glanders. Also took a tour of inspection of cattle between the Bow River and East Arrowhead country, accompanied by Deputy Mange Inspector Sanders, and found quite a few cases of mange on the open range. Also found a few cases of mange west of High River, in district No. 12, which were taken in and treated. Also quarantined three bands of cattle, and tested fourteen horses for glanders, destroying five head. Also quarantined three mares showing well marked symptoms of *maladie du coït*, in the Okotoks and Lineham districts.

I have the honour to be, sir,

Your obedient servant,

P. K. WALTERS,  
*Inspector.*

The Veterinary Director General,  
Ottawa.

S. HADWEN, D.V.S.

LETHBRIDGE, March 31, 1906.

SIR,—I have the honour to submit to you a brief report on the work done at the *Maladie du Coït* Experimental station from November 1, 1905, to the end of our year on March 31, 1906.

The stabling accommodation at the station was finished early in November, and I began at once to carry out your instructions regarding the work to be undertaken.

The experimental animals here now number twenty-seven ; twenty-five mares and two colts, also a number of the smaller animals for inoculations.

The object of the station being to discover the nature, causes, and general characteristics of the disease known as *maladie du coït*, my time thus being taken up mainly with post-mortem work at the station and in the surrounding country, also in collecting information as to the value of the different symptoms exhibited by the affected animals ; as an aid to diagnosing the affection.

The early evidences of the disease are so obscure that manifestly it is of the utmost importance to discover some sure means of diagnosis in the primary stages.



## SESSIONAL PAPER No. 15a

The details of the pathological work and experiments have been forwarded monthly for your consideration and approval.

Whenever possible I have accompanied the various *maladie du coït* inspectors on their inspection trips, and have added greatly to my knowledge of the disease and of the conditions under which it exists in Southern Alberta; in this connection I may state that the horse breeders of this southern portion of the province are becoming daily more alive to the fact that strict measures are necessary in order to stamp it out, and are anxious to co-operate with the inspectors in their work.

I believe this condition of affairs to be the natural result of knowledge gained by experience of the fatal and contagious nature of *maladie du coït*.

The time for the breeding experiments you suggested is fast approaching, the winter seems to be nearly over, it is to be hoped that these will be the means of elucidating the problems which now confront the veterinarians of Canada.

I have the honour to be, sir,

Your obedient servant,

SEYMOUR HADWEN,  
*Assistant Pathologist.*

The Veterinary Director General,  
Ottawa.

J. W. BLAND, V.S.

VANCOUVER, B.C., March 31, 1906.

SIR,—I beg to submit a report of inspections made by me at ports of Vancouver and New Westminster districts and sub-ports of Huntingdon and Douglas for five months ending March 31, 1906.

The following animals were inspected at Vancouver, B.C.:—Cow, 1; horses, 14; sheep, 11,130; all of which passed inspection.

The following animals were inspected at Westminster and sub-ports of Huntingdon and Douglas:—Horses, 228; mules, 4; cows, 88; also 20 pure bred Hereford animals; 88 cows and calves, 104 horses and 4 mules were entered as settlers' effects. All the above animals passed inspection.

The corralls erected by the railway company at Huntingdon and Douglas are a decided improvement and have facilitated the work of inspection at those ports. The stock yards in these districts have been kept in a clean and sanitary condition during the year.

A rather serious outbreak of glanders occurred in Vancouver during the past year but prompt and effective measures have been taken to stamp out the disease as rapidly as possible. All cars arriving with cattle from mange-affected districts of the Northwest have been thoroughly cleansed and disinfected upon arrival at this port. This work has been carefully carried out by the railway officials.

I have the honour to be, sir,

Your obedient servant,

J. W. BLAND,  
*Inspector.*

The Veterinary Director General,  
Ottawa.



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W. S. BELL, V.S.

CRANBROOK, B.C., March 31, 1906.

SIR,—I have the honour to submit to you my report from November 1, 1905, to March 31, 1906.

During the month of November, an outbreak of glanders occurred at Jaffray, on the premises of the East Kootenay Lumber Company, twenty in all showed clinical symptoms, the remaining contacts reacted to test and were destroyed. A number of horses which had been in contact or exposed were tested, eight of which reacted and was destroyed and all the premises thoroughly cleansed and disinfected.

The importation during those months is very light at Port of Gateway. There was cattle, 156; horses, 109; goats, 106. Rykert's; horses, 12; cattle, 10; 393 animals passed for inspection.

I have the honour to be, sir,  
Your obedient servant,

W. S. BELL,  
*Inspector.*

The Veterinary Director General,  
Ottawa.

D. TAMBLYN, D.V.S.

MIDWAY, B.C., March 31, 1906.

SIR,—I have the honour to submit to you the following report for the Department of Agriculture from November 1, 1905, to March 31, 1906.

BOUNDARY INSPECTION.

	For Entry.	In transit 1st Inspection.	In transit 2-6 Inspections.	Total.
Horses.....	21	214	337	572
Mules.....		2		2
Cattle.....	69	80		149
Sheep.....				
Swine.....	6			6
Grand total.....	96	296	337	729

In regard to the adequacy of the transit work here, I think the present system is all that is called for. One inspection per month is quite sufficient to preserve the health of our Canadian stock. I make it a rule when on the road to stop all transit teams and inspect them. I also visit the stables in which the freighters stable their horses, so that by doing this the majority of teams are inspected three and four times per month.

The inspection of 'stage horses' necessitates my making a trip once per month to Rock Creek, this being their destination.

I think as a precautionary measure that all horses imported from the Chesaw, Molson and Kipling districts should be subjected to the mallein test, as it is from these districts that my glandered cases have originated.



## SESSIONAL PAPER No. 15a

## GLANDERS.

On January 3rd, 1906, I received a report that glanders existed near Greenwood, B.C. On investigating I found no contagious disease.

On February 6, 1906, I inspected 3 horses, the property of S. Nelson Kipling, Wash., and I found it necessary to mallein them, of which two reacted, these animals were given over to the state veterinarian for Washington to deal with.

February 20, 1906, I received a telegram from Dr. Tolmie to proceed to Cranbrook and there to work in co-operation with Dr. Bell, in making an inspection of all lumber and milling company horses of that district, this tour of inspection kept me occupied the best part of a month, as it was impossible to inspect more than one camp per diem, owing to the camps being so scattered and the train service so unreliable. Outside of one stable, nothing of a contagious nature was detected.

One or two cases of influenza, accompanied with suppurating glands were seen at the Elk Lumber Company stables, Horner, and as I deemed it advisable, I asked Dr. Bell to make a second inspection within 15 to 20 days. Several reactors I had destroyed and burnt, and the usual precautions taken as to disinfecting, &c. The number of horses inspected during this tour numbered 289. Destroyed 3 on 2nd test, and 1 tested for the 1st time, 4 tested for the 2nd time.

During my absence from Midway the inspection work was carried on by Dr. Frank of Grand Forks.

## BLACK QUARTER.

On November 24, 1905, I visited two farms near Rock Creek, B.C., to investigate a disease in cattle, which I found to be black quarter. I gave both farmers full instructions as to the precautionary measures, disinfecting and burning of carcasses.

Number of cattle on premises.. . . .	134
Died.. . . .	8
Remaining.. . . .	126

## TUBERCULOSIS.

I have tested 25 head of cattle for importation from the United States, all of which I found healthy. The necessity of a stable here at Midway for this work I mentioned in my last report.

In closing I desire to mention that Dr. Tolmie, chief inspector for B.C., has afforded me the greatest assistance from time to time on matters of great importance to the department.

I have the honour to be, sir,

Your obedient servant,

D. TAMBLYN,  
*Inspector.*

The Veterinary Director General,  
Ottawa.

D. CORISTINE, V.S.

Osoyoos, B.C., March 31, 1906.

SIR,—I have the honour to submit the following report of quarantine work done at this point during the period between November 1, 1905, and March 31, 1906.



Inspections of stock, settlers' effects, prospective settlers and stock for speculative purposes as follows:—

Horses...	29
Pigs...	6

There has been no indication of disease among stock imported.

There has been no outbreak of contagious or infectious disease in the district during the period mentioned.

I endeavour as far as possible to keep a supervision over the district from Anarchist mountain to Similkameen valley as far as Keremeos, and from international boundary to around Penticton.

I have recently seen the bulk of the cattle owned by the Southern Okanagan Land Company and F. Richter, of Keremeos, these being the only large bunches in the district.

There is no disease among them this spring, although a good many of them are in a rather poor condition. The past winter has not been a favourable one for stock, and so far the spring is cold and dry, consequently grass is making poor headway.

I have the honour to be, sir,  
Your obedient servant,

D. CORISTINE,  
*Inspector.*

The Veterinary Director General,  
Ottawa.

J. W. FRANK, V.S.

GRAND FORKS, B.C., March 31, 1906.

SIR,—I have the honour to submit a report of work performed from November 1, 1905, to March 31, 1906, inclusive.

During the above mentioned period the following animals have been inspected:—

Horses ..	286
Mules ..	4
Cattle ..	37
Sheep ..	0
Swine ..	28

Of this number 28 horses, 37 cattle and 28 swine were for importation (the others being principally animals in transit), six horses of this number were refused entry as they reacted to the mallein test.

During the above mentioned period five horses have been destroyed with glanders in this town, one on inspection, three on the first test, and one on being tested the second time.

Six other horses came under the test, five of which have been tested the second time and the sixth is at present undergoing the test for the third time. Two of the five have already been declared healthy.

Information received as to a case of mange in horses, proved to be without foundation.

I have the honour to be, sir,  
Your obedient servant,

J. WILLIAMSON FRANK,  
*Inspector.*

The Veterinary Director General,  
Ottawa.



SESSIONAL PAPER No. 15a

G. S. JERMYN, V.S.

VERNON, March 31, 1906.

SIR,—I beg to submit the following report to the month of November. At Osoyoos I inspected the following, two horses and six swine, and met with no disease.

Since starting on December 6 to work under instructions from Dr. Tolmie in the Okanagan district, I have tested for glanders five hundred and seventy-seven horses (577), of which two hundred and nineteen were diseased, and were destroyed in the various places as follows:—

Vernon and vicinity, 214 horses tested, 76 destroyed.  
 Kelowna and vicinity, 154 horses tested, 86 destroyed.  
 Peachland and vicinity, 63 horses tested, 26 destroyed.  
 Armstrong and vicinity, 31 horses tested, 23 destroyed.  
 Enderby and vicinity 15 horses tested, 8 destroyed.

The disease is gradually being controlled, the worst centres of infection in the Okanagan having been dealt with.

I have the honour to be, sir,  
 Your obedient servant,

The Veterinary Director General,  
 Ottawa.

G. S. JERMYN,  
*Inspector.*

J. GIBBINS, M.R.C.V.S.

March 31, 1906.

SIR,—I have the honour herewith to submit my report as requested.

Since forwarding my last report I have been dealing solely with the outbreak of glanders.

In all I have tested for some 520, retested 86, and again retested for a third time, 23. And of the above numbers 78 have been killed for glanders, not including 3 condemned on December 29. On the second test 12 were killed, and one on the third test, making the total killed 78 as above stated.

I have the honour to be, sir,  
 Your obedient servant,

The Veterinary Director General,  
 Ottawa.

JOHNSON GIBBINS,  
*Inspector.*

C. R. RICHARDS, M.D.V.

VICTORIA, B.C., March 31, 1906.

SIR,—I beg to submit the following as my report of the work carried on from October 31, 1905, to March 31, 1906.

The importations were as follows:—

Horses.. . . .	18
Mules.. . . .	42
Cattle.. . . .	3
Sheep.. . . .	8,771
Exportations—	
Horses.. . . .	4



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175 sheep consigned to the British Columbia Market Company, Victoria, were returned to Washington, owing to being affected with scab. One Jersey bull, consigned to Geo. Sangster, Victoria, was rejected, being tuberculous.

I have tested with mallein 27 horses, 14 were tested a second, and one a third time, making the total number of tests 42. Nine were destroyed affected with glanders. In all cases a thorough disinfection of the premises followed when the disease was found.

Hog cholera was dealt with at Fiddick Junction and Nanaimo; 16 hogs were destroyed.

I have the honour to be, sir,  
Your obedient servant,  
C. R. RICHARDS,  
*Inspector.*

The Veterinary Director General,  
Ottawa.

H. H. S. GEORGE, M.R.C.V.S.

KAMLOOPS, B.C., March 31, 1906.

SIR,—I have the honour to submit a report of inspection made by me for the period dating from November 1, 1905, to March 31, 1906.

I have inspected horses in the following districts during that time for glanders, Peachland, Golden, Palliser, Vernon, Grande Prairie and Enderby, B.C.

Out of the total number of horses tested, viz., 435, one hundred and eighty-four (184) passed the test, one hundred and three (103) reacted to the test, and one hundred and forty-eight (148) are suspects.

Below is a tabulated form of the number of horses submitted to the test in each district, and the results of the test for that district.

The number of suspects may seem to appear very large, but in a great number of cases the horses, although if by themselves would have passed the test, were held, as I thought it advisable, they being in company with those destroyed for the disease, and during the carrying out of the test were eating out of the same manger.

District.	Passed.	Reacted.	Suspected.	Number Tested.
Peachland, B. C.....	45	26	48	119
Golden, B. C.....	6	15	19	40
Palliser, B. C.....	16	4	14	34
Vernon, B. C.....	113	50	47	210
Grande Prairie, B. C.....	1	9	16	26
Enderby, B. C.....	3	.....	3	6

I have the honour to be, sir,  
Your obedient servant,  
H. H. S. GEORGE,  
*Inspector.*

The Veterinary Director General,  
Ottawa.



SESSIONAL PAPER No. 15a

D. WARNOCK, M.R.C.V.S.

PINCHER CREEK, November 28, 1905.

SIR,—I have the honour herewith to submit my report relative to disease prevailing among cattle in Beaver Creek district, Porcupine hills, Alberta.

‘DOGIE’ DISEASE.

This is a non-contagious disease and in my opinion, is a combination of osteomalacia and fragilitas ossium, perhaps also osteoporosis.

I cannot describe it better than to say that it is an arrested development of the bony frame, affecting more particularly the large metacarpal and metatarsal bones (which become fragile, but not flexible); also the nasal and inferior maxillary bones (which undergo a morbid hypertrophy and process of softening).

HISTORY.

I have been familiar with this disease for some years, it having appeared shortly after the late cycle of wet seasons began. I have only seen it among cattle grazing in ‘Tennessee Coulee’ and ‘Jack O’Neil Coulee, on Beaver Creek, and on that portion of the range south of the Porcupine hills, now known as ‘Summerview.’ The soil in these districts is a light warm sandy loam, which dries out very rapidly. These were always favourite ranges with cattle, and during the dry seasons of the early winters were so heavily overstocked that grass was badly eaten or trodden out, the result being that when the rainy season reappeared there was a rapid and prolific growth of weeds, particularly loco-weed, the latter being, at the present time, quite as abundant as grass.

Disease was first noticed among a few Ontario stockers the most prominent symptoms being an unsteady gait, swelling of the nasal bones, and a dirty discharge from the nostrils. Suspecting ‘malignant catarrh’ or ‘tuberculosis’ I destroyed the animals for post-mortem purposes, but was surprised to find the internal organs perfectly healthy, although anæmic. Later, in the same season, I saw more advanced cases, and associating the appearance of disease with the sodden state of the range and prevalence of stagnant lakes, suspected ‘strongylus tetracanthus,’ but on making post-mortems, and laying open the intestines from end to end I failed to find evidence of the presence of harmful parasites. However, noticing the imperfectly masticated condition of the contents of the rumen, I examined the teeth, and discovered that what, at a distance, I had taken to be an oedematous swelling was really a swelling of the inferior maxillary bones; I examined these and found them so softened as to be but little harder than cartilage, the teeth badly developed and loose. Observing that every affected animal was either a Manitoba or Ontario stocker, I was much perplexed regarding the cause, and the reason for the apparent immunity of native cattle, grazing on the same range, was a question often put to me as a ‘poser’ by the cowboys, when I doubted the correctness of their theory that the disease was due to some inherent defect in the ‘makeup’ of ‘dogies’ in general. In reply I could only point out that, for some years, dogies had done well, that disease had appeared subsequent to the return of the wet seasons, and that, it must be due to some pernicious plant—at that time I did not know the loco plant.

As disease appeared to be confined to dogies grazing in the localities mentioned, I made it a practice to have these cattle kept away as much as possible, and, in that way prevented much loss. In regard to range cattle not becoming affected, I would say that, after a long experience and close observation, it is my belief that animals native to certain areas of the range are able to discriminate between noxious and innocuous plants, indigenous to that locality. I think this, rather than immunity to effect, is the true explanation. In support of this theory I shall here mention some cases in point. On the moist west-slope of the Porcupine hills and foot hills, water



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hemlock and other toxic plants grow in abundance. Cattle raised there do not suffer much, but when cattle are driven in from outside points they seem to eat anything that is green and succulent, with, in the case of water hemlock, dire results to themselves. For example, in 1900 or 1901, Mr. Burton, of Willow Creek, located a ranch on the west side of the Porcupine hills, about 12 miles north of the Upper Walrond, and drove his cattle across the hills to his new location. Within a few weeks Mr. Burton lost many cattle from hemlock poisoning, and to avert heavier loss, was compelled to move his cattle back to their old range. Other settlers, owning cattle native to the hills, grazing on the location selected by Mr. Burton, did not suffer loss.

Again, about mid-summer of the present year, Mr. F. W. Godsall moved about 160 cows to Mr. Powlett's ranch on Red Deer river. These cattle were shipped from Pincher to Bassano station, I think, on the main line of the Canadian Pacific Railway, unloaded there, driven slowly a few miles north until a side hill was reached on which there was good grass, but, unfortunately, also plenty of water hemlock. There the cattle were allowed to graze for some hours, or until the herders noticed something amiss with some of them, when they were at once rounded up and driven off the hillside, too late, however, as within two or three days 37 cows died, showing all symptoms of acute poisoning. Mr. Godsall's cattle have for some years past been kept in inclosed pastures in which there is no hemlock, were not familiar with it, and evidently, ate greedily of it.

Up till 1901 I did not recognize loco-weed, but about that time I met Mr. Henry Smith, of High River (who had had considerable experience in Wyoming), at a meeting of the executive committee of the Western Stockgrowers Association, held at Macleod, and incidentally discussed the effects of poisonous plants. Mr. Smith, on his return to High River, very kindly sent me some specimens which enabled me to identify the plant growing so abundantly in Tennessee Coulee and on Beaver Creek.

#### SYMPTOMS OF 'DOGIE' DISEASE.

As a rule, the first noticeable symptom is an unthriftiness, the animal begins to lose flesh, the nasal bones are swollen, and there is a discharge from the nose. Later, the under-jaw becomes swollen (generally uniform in both rami), the senses of hearing, sight, taste and smell are impaired. Occasionally the chin becomes so swollen as to cause the lower jaw to become under-shot, the incisor teeth protruding from the mouth, giving an appearance very much like the jaw of a bull dog. In other cases the first symptom may be a rigidity of the spine, the animal walks with a 'stilty' unsteady gait, does not lie down, but will stand for hours at a time head down, and legs propped apart. I have ridden up within a few feet of an affected animal standing on the range in a semi-comatose condition, and on being startled, and attempting to move quickly the animal has fallen flat on its side, unable to rise until rolled on to its sternum, when it would get up without assistance, but would rise in the same way that a horse does. I have seen such an animal stumble and break a limb below the knee. Animals showing spinal symptoms soon become badly sway-backed, due to softening of the vertebrae, and as a rule, do not live long.

#### CAUSE OF DEATH.

Some animals die from paralysis, others are killed by coyotes, but the majority die a lingering death from starvation.

In 1904 I was consulted by Robbins Bros., of Beaver Creek, regarding an outbreak of disease in a bunch of Manitoba dogies purchased by them two years previously. These cattle had been confined to pastures, or close-herded on Beaver Creek since being brought in. I had heard that Robbins Bros. had suffered considerable loss, but on visiting their ranch I was astonished to find quite 50 per cent of their cattle affected in the same way as the Waldron dogies. In the bunch were a number of advanced cases, so selecting one of the most typical, a 4-years-old heifer, I had it



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destroyed and made an autopsy in the presence of Mr. A. W. Robbins and Mr. Jas. Allison.

## POST-MORTEM APPEARANCE OF ROBBINS' HEIFER.

On exposing the bones of the lower jaw these were found to be very much enlarged and softened. They were harder than cartilage, but could be readily sliced with a strong knife. Molar teeth badly developed, and some so loose in the alveoli that they could be removed by a strong pull with the fingers. Incisor teeth irregular, and the alveoli so soft that the teeth could be easily sliced off.

Superior maxillary bones normal, and teeth firm. Nasal bones swollen and softened. Bones of the skull thickened, but hard. On removing the large metacarpal bone on the left foreleg, it outwardly showed no change, but when broken across, which was easily done by a sharp blow with a hammer, the shaft of the bone was thin, the medulla enlarged, the marrow detached from the walls, gelatinous (having very much the appearance of cooked marrow) and easily shaken from the canal. The left femur was removed, and appeared to be healthy until broken across. There was not much thinning of the walls, but the marrow was abnormal and looked very much like coagulated arterial blood. Dr. Hadwen drew my attention to a like condition existing in the femurs of a stallion destroyed at High River, affected with *maladie du coït*, and which stallion for some time prior to death, exhibited pronounced symptoms of nervous affection.

The thoracic and abdominal organs were healthy, but very anaemic. The ingesta very imperfectly masticated, largely mixed with seeds, and stems of loco-weed, pieces of wood, feathers, &c.—the presence of foreign bodies is suggestive of depraved appetite, but I think the impaired sense of taste and smell is responsible.

## TREATMENT.

Medical treatment is of no avail as long as the animal is permitted access to locofest pasture. Easily masticated and nourishing food is the remedy, and drugs are not necessary, although, no doubt, a course of mineral and vegetable tonics would materially hasten recovery. For some years I have advised stockmen, by whom I have been consulted, that hand-feeding was the proper remedy, or failing that, a change of range. If taken in time, *i.e.*, before the jaws and teeth have become so badly affected as to preclude prehension and mastication, or the digestive functions have become too impaired, many animals will recover sufficiently to become fit for beef, although they do not grow. Badly affected cattle should be destroyed rather than left to die from starvation, or left to meet a cruel death from the attacks of coyotes. I have seen an affected animal down on the range, with its tail eaten off, and great holes eaten into its thighs, but still conscious.

Almost the first indication of approaching convalescence is a periostitis of the metacarpal and metatarsal bones—nature's effort, I presume to strengthen the already weakened bones. Robbins Bros., acting on my advice, turned their cattle loose on fresh pasture. In September of this year I inspected a carload of beef cattle at Pincher for shipment to British Columbia, composed principally of survivors from Robbins Bros. bunch. These cattle were fat, but no stockmen could have failed to notice their under-sized stunted appearance, the knotty, thickened cannon bones, and the heavy under jaw. Robbins Bros. suffered heavy loss and in face of their experience with dogies, have disposed of their ranch on Beaver Creek, and are going out of the cattle business.

It was the custom at the Waldron ranch to put affected cattle in the work horse pasture, where they lived principally on the droppings from the horses, and refuse from the stables generally, after a time, becoming fat enough to be fit for beef—this statement may appear somewhat imaginative, but many ex-cowboys of the company will say that affected animals have been known to follow the horse-herd from camp to



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camp on the round-up, subsisting (and with obvious improvement) on the droppings from the horses, and refuse thrown from the mess tent. It was from noticing this that the above method of handling these cattle occurred to me. I do not think that the Walrond Ranch Company has suffered so very heavily from this disease. If so, it has been within the last two years. That company's loss has been much heavier from hemlock poisoning, on which I am preparing a separate report.

I have seen a somewhat similar disease among sheep in Scotland, attributed to absence of certain soil constituents and consequent poor quality of grass.

Here, however, I do not think the soil has anything to do with it, except so far as being favourable to the growth of the loco-plant. Were the disease due to poor quality of grass I should expect to find the native cattle affected equally with imported. Recently some of the native cattle in these districts have become affected and, I think, this is explained by the fact that month by month the grazing area is becoming more curtailed, while year by year cattle are becoming more domesticated, less able to take care of themselves, and now eat that which their ancestors eschewed.

Dr. Burnett, on his recent visit to Beaver Creek and seeing affected cattle for the first time, evidently had his attention attracted by the symptoms in much the same way that these appeared to me in 1899.

I look upon this disease as being of purely dietetic origin, endemic to certain districts, leading to alteration in bone composition, consequent to the effect of loco-weed upon the nervous system, the pathological changes varying according to the structure of the bones affected.

In my opinion it will prevail until these portions of the range have been given time to become rehabilitated after years of over stocking.

I have the honour to be, sir,

Your obedient servant,

D. WARNOCK,

*Inspector.*

The Veterinary Director General,  
Ottawa.

PINCHER CREEK, November 30, 1905.

SIR,—I have the honour to herewith submit my report relative to poisoning by water hemlock among cattle grazing in the Porcupine hills.

Water hemlock is indigenous to many districts of the range country, but, as I pointed out in my report *re* loco-weed poisoning, it is especially abundant in the Porcupine hills, particularly on the west slope.

It is deadliest during the early spring months, or at least, that is the season at which cattle suffer most, and is the only time of the year that cattle 'native' to that district seem to eat it. It is most deadly during cold, late springs, when green grass is tardy in appearing, or is of slow growth.

In the Porcupine hills sharp frosts prevail until well on in June, thereby retarding vegetation, and as a rule, grass is from three weeks to one month later in appearing than in the case of the flats east of the hills. Occasionally, but very rarely, grass is earlier in the hills than on the flats, but I have only seen three exceptions during a residence of thirteen years.

When grass begins to appear cattle become restless, they roam over the prairie hunting for green grass, and that is the time when they suffer most. They frequent the banks of creeks, the borders of lakes, or the sheltered sides of coulees, and many are found dead from the effects of eating hemlock.



## SESSIONAL PAPER No. 15a

When plenty of range is available, it was my practice at the Waldron ranch to have all cattle driven out of the hills as soon as green grass began to appear. They were drifted out onto the flats where, as a rule, grass was plentiful long before there was any in the hills. This course made the roundup later in the season, a little more expensive, but saved the loss of many cattle, and was absolutely necessary after a few importations of eastern stockers had been made.

Now that less range is available, and for other reasons, cattle are held in the valley between the Porcupine hills and the Livingstone range of the Rockies all the year round, and, I am informed on good authority that the annual spring loss from hemlock poisoning is extremely heavy. Careful stockmen combat this by hand-feeding till late in spring, or by holding their cattle in pastures specially reserved for the purpose, and do not 'turn loose' until a full bite of grass is procurable.

## SYMPTOMS.

When an animal has eaten water hemlock, symptoms of poisoning, as a rule, do not appear until after rumination has been in progress for some time. Then the animal becomes uneasy, if lying down it gets up, kicks at the abdomen, switches its tail, may walk some distance, lie down and begin ruminating again. After a short time the symptoms become more violent, the animal rises, appears to suffer severely, very often vomiting and acute diarrhoea set in, the abdomen becomes tympanitic, the animal gallops around blindly delirious, or becomes comatose, and death rapidly ensues, often quite as rapidly as blackleg.

## REMARKS.

I am of the opinion that as long as the plant is contained in the rumen it does not exert its toxic effects, and that it is only after maceration in the rumen and remastication that these effects are manifested. I do not think it is necessary that portions of the plant should pass into the intestines before the animal becomes affected, and I am convinced that I have seen poisoning occur from absorption of the juice of the plant during rumination. In 1900 I saw four imported Shorthorn bulls die in one afternoon from the effects of water hemlock eaten on the morning of the same day, the bull-herd having been allowed to graze for a few hours on the borders of a lake. On post-mortem I found that no portion of the plant had passed beyond the second stomach, nor were there pronounced intestinal lesions.

## TREATMENT.

This, to be effective, must be prompt, but affected animals are seldom noticed in time for treatment to be of any avail. Medicines per the mouth are in most cases inadmissible, and for this reason treatment by amateurs is seldom successful. If an attempt be made to administer medicine by the mouth the affected animal generally drops as soon as its head is raised above the level, and there is grave danger of choking. Again, if vomiting is present the medicine is ejected almost as soon as given. As a rule, medicines can only be given subcutaneously, intravenously, or introduced directly into the rumen through the abdominal wall.

The latter method can be successfully carried out by almost any stockman if he possess a good cattle trocar and canula, and in this way doses of raw linseed oil and soda bicarbonate can safely be given. Also stimulants such as aromatic spirit of ammonia, spirit of turpentine, whiskey, brandy, &c., if the animal is comatose, where there is violent pain or delirium, chloral hydrate, bromide of potassium or tincture of opium are the remedies I have found most useful, but I have used these so as to secure their most rapid effects.

Most writers on veterinary medicine recommend large doses of purgative medicine in similar cases, but my experience with hemlock poisoning has been that drastic cathartics are a mistake, a 'kill or cure' method, with heavy odds against a cure. It



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is my opinion that by administering powerful cathartics we only succeed in disseminating the poison throughout the entire intestinal tract with fatal result. The patient will die before the most rapid purgative can eliminate the poison from its system. If the toxic principle could be rendered unabsorbable, then purgatives would be safe. In my absence, I have lost cases forty-eight hours after acute symptoms had subsided and the animal appeared to be convalescent. Evidently some of the poison was still retained in the rumen, and the symptoms reappeared when the animals commenced ruminating again. If vomition could be induced in cattle by the administration of emetics so as to completely empty the rumen, that would be the remedy after acute symptoms had passed off.

From past experience if I had a valuable animal under treatment, and had been successful in alleviating the acute symptoms, I should not consider the animal safe until rumenotomy had been performed and the rumen emptied, as far as practicable of its deleterious contents. If this is not done the symptoms are almost sure to return. Rumenotomy, carefully performed, gives excellent results in grain engorgement and should be equally successful here.

Were I asked by an owner to outline appropriate treatment for a valuable animal known to have eaten water hemlock my reply would be 'Tie a piece of fork handle in the animal's mouth in the same manner that you would retain the bit in a horse's mouth, to prevent rumination, then procure competent veterinary services at the earliest possible moment, and have the contents of the "paunch" removed.'

I have the honour to be, sir,

Your obedient servant,

D. WARNOCK,

*Inspector.*

The Veterinary Director General,  
Ottawa.

### MALADIE DU COIT.

This disease which has long been known in the old world was introduced to this continent in 1882 by a Percheron stallion imported from France, and used for service in Illinois. Unfortunately the nature of the affection was not discovered until several years had elapsed, during which period a considerable number of stallions and mares had become infected. Some of these infected animals were removed from the district before quarantine was imposed, with the result that a number of disease centres have been established in various parts of the United States. The large influx of American horses is undoubtedly responsible for the introduction of this loathsome malady to western Canada, where its existence was first reported from the Lethbridge district in March, 1904.

Since that time active measures have been adopted for its repression, but owing to the nature of the malady and the loose conditions under which horses are handled in the range country, it is a matter of great difficulty to deal with it effectually. A copy of the regulations now in force is printed herewith, and the hearty co-operation of horse owners in enforcing the same is earnestly solicited. Compensation on a most liberal scale, when the intrinsic value of a diseased animal is considered, is paid for all animals slaughtered by order of an authorized inspector, except when the owner has been guilty of an infraction of the Animal Contagious Diseases Act, or of the regulations passed under the authority of the said Act.



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Maladie du coït, wherever it exists, paralyses horse-breeding operations and ruins those engaged in the horse-breeding industry. It is, therefore, the plain duty of all interested in horses or horse-breeding to second in every possible way the efforts of the inspectors of this department to stamp it out wherever found. As its eradication is a matter of public and not private interest, every breeder is urged to report immediately any suspicious case of the existence of which he may become aware, whether among his own animals or those of others.

Maladie du coït (Dourine) is a malignant, insidious, incurable disease peculiar to the horse, supposed to be due to the entrance into the system of a micro-organism, known as the *Trypanosoma Equiperdum*.

This disease, as its name implies, is essentially one of coition, being transmitted during the act of service, from stallion to mare, and vice versa. Some authorities report, however, that they have succeeded in inducing it, by experimental inoculation, in the horse and in several other animals of different species.

The symptoms, as in other contagious diseases, differ considerably according to the susceptibility of the animal, the nature of its surroundings, and the vitality of the virus. Some cases, therefore, are acute, the various stages of the disease following each other rapidly, and these generally reach a fatal termination within a very short time. Unfortunately, however, this is rarely the case, the disease generally following a chronic, insidious and semi-latent course, making it, in view of the constant danger of infection, a most serious menace to the horse-breeding industry.

In reading the following description of the symptoms as presented in the three stages of the malady, it will be well to bear in mind the great liability to variation, such as the appearance of characteristic symptoms in one animal, and their total, or partial, absence in another. The stages are not ushered in uniformly, neither are they of regular duration, as in many cases almost all evidence of disease will occasionally disappear for a time, only to recur later and with renewed virulence.

The duration of the disease varies, and may extend from a month to several years, the average time, however, being about eighteen months. After copulation with an infected animal, the germ, having been transmitted during this act, commences to multiply rapidly or tardily, according to its vitality, the susceptibility of the infected individual and the favourable or unfavourable condition of its surroundings in the generative organs. This constitutes the incubative period, which may last from one to two weeks or much longer.

The primary stage is ushered in after the germs have developed sufficient activity to produce irritation in the adjacent tissues, whether observable or not. In the stallion the mucous membrane of the urethral canal (passage through which urine is voided) exhibits the first sign of irritation; its external opening at the end of the penis (*Meatus Urinarius*) assumes a bright red colour, accompanied by swelling, which may cause it to bulge out prominently, followed by a discharge, at first almost imperceptible, but increasing in quantity as the disease progresses.

The above mentioned symptoms are often very meagre, and frequently overlooked, especially so with the unsuspecting. During this period, however, the stallion is a positive infective agent, his desire for serving mares being greatly increased and his ability to perform this function not seriously impaired.

The possibility of widespread infection, if such a case is not detected and immediately placed under restraint, can be readily appreciated.

As the disease advances the irritation of the generative organs increase, frequent erections of the penis follow, this organ often attaining unusual proportions, and occasionally swelling to such an extent as to prevent its complete return to the sheath. Urination is performed often and incompletely, the urine being mixed with a mucous discharge varying in quantity, and the act is often accompanied by switching of the tail or stamping of the feet, due to the irritable condition of the parts.



Red spots may appear on the penis and adjacent parts; these may disappear rapidly with a tendency to return, or they may increase in virulence, forming discharging sores.

White spots, due to loss of pigment (colouring matter of the skin), may indicate previous eruptions on the penis, sheath and surrounding tissues. This condition is often well marked, in some cases the spots forming large patches, which may involve the major portion of the penis, changing it to a dirty yellowish white, rough and unhealthy looking organ, while in others, they are only slightly perceptible or altogether absent.

A gradual swelling of the sheath becomes noticeable, and is frequently the first symptom observed; this swelling often involves the scrotum and testicles, and may extend to the abdomen and limbs. The character of the swelling is generally cold, doughy and passive, and it may obstinately persist, disappear rapidly, remain absent, or return frequently. Occasionally it is hot, tender and painful and shows a tendency to the formation of vesicles and erosions of the tissues, accompanied by a purulent discharge.

The penis, in many cases, becomes protruded from the sheath continually, the animal being unable to retract it, owing to the loss of such power, or to the excessive amount of swelling present. The appetite still remains unimpaired, and no serious constitutional disturbances are yet observable.

In the mare the symptoms are somewhat similar, differing only in accordance with the anatomical and physiological structures of the generative organs. The same variable incubative period follows infection as in the male. The preliminary symptoms are also of a very imperfect type, and difficult to detect, unless suspicions have been previously aroused. They are most frequently insidious, and consequently very dangerous, necessitating, as in the stallion, every precaution, where the slightest cause for suspicion exists.

On close observation, however, a discharge may be noticed from the vulva (external opening); the mucous membrane lining it and the vagina (canal from external opening to the womb) gradually assume a discoloured, thickened and rough appearance, giving evidence of increasing irritation and the consequent inflammatory results. Red spots may make their appearance on the vaginal membrane, and when present, are especially noticeable in the region of the already thickened and erect clitoris (the part commonly exposed by mares in season), a condition of this organ which to a greater or less extent, is persistently present throughout the course of the disease.

An abnormal sexual desire is intermittently present, the mare, at intervals, continually exposing the clitoris. Urine, mixed with mucous, is frequently voided in jets. This causes increased irritation, followed by stretching, stamping the feet, and switching the tail. An extremely irritable condition has been observed accompanying these symptoms, the animal rubbing itself violently against any object.

The discharge from the vulva becomes sticky and irritating, adhering to adjacent parts and scalding the contact tissues. The discharge may increase or decrease in quantity, and become more purulent as the disease advances. Local swellings appear, as in the stallion, at any stage of the disease, and may also, in the mare, be the first noticeable symptom; these frequently affecting one side of the vulva and may extend to the other, or spreading rapidly, involve the mammary glands, abdomen and limbs, or they may confine themselves persistently to more limited areas, often giving the vulva a puckered and deformed appearance.

As in the stallion, these swellings may persist, disappear suddenly, remain absent, or recur frequently. They are generally of a doughy consistency, cold and painless, but occasionally, appear in an acute form, with heat and pain present, accompanied by a tendency to the formation of vesicles, followed by erosion and discharge.

As the disease advances, the lining membranes of the vulva and vagina assume a yellowish colour, the clitoris distinctly presenting a white or yellowish, and slightly corrugated appearance. White spots appear in the locations of previous vesicles, which vary considerably from small indefinite ones to most decided and marked patches.



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Constitutional symptoms may not appear for weeks, and often months, and in some cases not until the local symptoms have been absent for some time, the animal still maintaining a good appetite.

THE SECONDARY STAGE is the result of the migration of the micro-organisms with their accompanying toxins, into the general system, which may occur from one to three months after infection, but differs largely in individuals. The disease now commences to mark its progress in no uncertain manner, and it is at this stage that the inexperienced realize that there 's something seriously wrong. One or more, or all symptoms become aggravated, constitutional symptoms supervene, the condition of the skin and hair becomes dry and harsh, the rounded form disappears and the outlines of the ribs, haunches and spine gradually gain prominence, the eye takes on a dull, expressionless stare, the ears lop over, the lips often hang pendulous, the eyelids droop, owing to partial paralysis of the nerves supplying the parts, and a general marked unthrifty appearance presents itself.

In the stallion the appetite may be capricious, but is rarely impaired; langour and dullness replace his former vigour, occasional trembling may be noticed over the surface of the body, especially so when other horses are approaching. Although stupid, and apparently not interested in his surroundings, he frequently neighs persistently.

The swellings, when present, become hard and chronic, the testicles either enlarged (this condition being due to the thickening of the membranes enveloping the organs, and not the testicular substance proper) or atrophied, either hanging abnormally pendulous or lying close up to the abdomen.

The infection may now show its presence along the course of the lymphatics, by the formation of ulcers in the various glands, which may discharge a purulent fluid, or, on the other hand, a marked swelling and thickening of the glands may exist including the sub-maxillary under the lower jaw.

Rather peculiar, the characteristic elevations make their appearance at irregular intervals during this stage of the disease, and have been called, very appropriately, 'plaques.' They vary largely in dimensions and may appear rapidly, disappear as quickly, show a tendency to persist, remain absent, or break out in other localities. They are in the majority of cases, neither hot nor painful, but occasionally may assume an irritable aspect.

Plaques may appear singly, or in groups, and are seen most frequently in the region of the croup, abdomen, chest, shoulders and neck, and are better described as flat elevations, raising up the skin, with defined edges, in some cases quite prominent, in others only perceptible by taking a position alongside, in front of, or behind the animal, and viewing the outline of the body. Marked alterations in the animal's gait soon become apparent, when standing he maintains his position imperfectly, moves his weight from one limb to another, keeping one limb in a semi-flexed position, and often raising it from the ground. When walking, knuckling over, or the dragging of a hind limb are often distinctly noticeable. Upon trotting, a stilty, jerky and swaying motion is quite apparent, the animal often falling down unexpectedly, showing a general inability to control his movements. He now prefers a lying posture, and when rising, manifests difficulty, and exhibits evidence of pain in doing so.

The stallion is unable to cover, the erections of the penis being feeble and incomplete, and his inability to handle himself well marked.

In the mare, the same constitutional symptoms prominently develop. The local swellings also assume a hard and chronic form, giving the vulva a distorted appearance. They may also occur on each side of, or below the vulva, which at this stage, often remains partially open at its lower extremity, due to the chronic thickening of the clitoris. The mucous membrane of the vagina presents a dirty yellowish, rough appearance, the discharge when present, acquiring a more purulent nature, and irritating the adjacent parts. Plaques may make their appearance in the same manner as in the stallion, and in the same irregular way.



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The infection of the lymphatic system also shows the same inclination as in the male, causing enlarged glands, or suppurating sores. Marked depression and stupidity intervene, with the same inability to control movements, the lying posture being favoured.

THE TERTIARY STAGE in both sexes is marked by extreme depletion of the system, the progression of the disease having produced secondary lesions of a grave nature in the more important organs of the body. The senses become more and more blunted, the discharge from ulcers and generative organs may be profuse, in some cases there is a catarrhal discharge from the nostrils, sometimes accompanied by an inflammatory condition of the eyes.

The patient, at this stage has difficulty in maintaining a standing posture, generally requiring support. When moving, it sways from side to side and stubs the toes. The knees and pasterns finally give way, the animal falls and is unable to rise again. General paralysis, pneumonia, or other results of septic infection intervene, and hasten the end.

Cases have been known in which animals have reached the tertiary stage and have then made an apparent recovery. In all such cases, however, the disease has again manifested itself in a most severe form, ending in the death of the affected animal.

An apparent recovery, therefore, should be looked upon with grave suspicion.

### CONGENITAL EXANTHEMA.

Maladie du Coït is frequently confounded with another, much more common, but, fortunately, far less dangerous venereal disease of horses known as Coital or Congenital Exanthema. This affection, which is not at all uncommon in Canada, generally makes its appearance during the breeding season, attention being directed to it by the fact of various mares served by the same horse becoming affected at once.

Such mares show the presence of vaginal irritation by frequent attempts to urinate and by switching the tail. Examination shows the vagina inflamed and studded with small vesicles which break leaving ulcers which, however, heal readily leaving temporary scars. These vesicles also appear frequently on the external surface of the vulva leaving in this situation small white spots about the size of grains of shot, which gradually become recovered with pigment. There is, during the acute stage, more or less muco-purulent discharge from the vagina, which, however, soon ceases as the irritation disappears. The disease is not of a malignant nature, although it is undoubtedly contagious. It yields readily to simple treatment and, except when complicated by co-existent strangles or other disease, generally runs its course in from two to four weeks.

In the stallion the vesicles appear on the penis and sheath and present characteristics similar to those described as occurring in the mare. Sometimes, when the horse is kept at service by an ignorant or unscrupulous groom, the ulcers become greatly irritated, with the result that prolonged rest and careful treatment are necessitated in order to restore the parts to a normal condition.

Coital Exanthema is not a serious disease, its principal ill effect being the loss due to the non-impregnation of breeding mares at the proper season. While no great alarm need, therefore, be felt on discovering its presence, it is strongly recommended, in view of the existence in Canada of the greatly more serious Maladie du Coït, that owners of mares or stallions showing any abnormal condition of the generative organs should immediately subject them to a careful examination at the hands of a qualified veterinary practitioner. After such examination if any doubt remains as to the nature of the disease the matter should be at once reported to this department and to the nearest veterinary inspector.



SESSIONAL PAPER No. 15a

## DOMINION OF CANADA.

## REGULATIONS RELATING TO MALADIE DU COÏT.

*Authorized by Order in Council dated the 22nd day of July, 1905, in virtue of 'The Animal Contagious Diseases Act, 1903.'*

1. No animal which is affected, or suspected of being affected, with Maladie du Coït shall be permitted to run at large or to come in contact with any animal which is not so affected, and no such animal shall, in any case, be used for breeding purposes.

2. Any veterinary inspector may declare to be an infected place within the meaning of 'The Animal Contagious Disease Act, 1903.' any common, field, stable or other place or premises where animals are found which are affected or suspected of being affected with Maladie du Coït.

3. No animal shall be removed out of an infected place without a license signed by an inspector.

4. The Veterinary Director General may, from time to time, order the slaughter castration, or other disposition of animals affected with Maladie du Coït.

5. Every veterinary inspector shall have full power to order animals affected, or suspected of being affected with Maladie du Coït to be collected for inspection, and when necessary, to be detained and isolated or otherwise dealt with in accordance with the instructions of the Veterinary Director General, and no indemnity shall be allowed to the owner in case of damage arising out of or resulting from such actions, except as hereinafter provided.

6. The expenses of and incidental to the collection, isolation, seizure, castration or otherwise dealing with horses for the purposes of these regulations shall be borne by the owners of the animals.

7. No entire horse or ridgling more than one year old shall be permitted to run at large on unfenced lands in the province of Alberta or in that portion of the province of Saskatchewan lying west of the third principal meridian.

8. Any entire horse or ridgling more than one year old found running at large within the area defined above may be seized and held on the order of any duly authorized veterinary inspector of the Department of Agriculture, who shall forthwith whenever possible notify the owner of the said horse of such seizure, and the said horse, if not claimed within thirty days of such seizure, may be castrated, and no indemnity shall be allowed to the owner in case of damages arising out of or resulting from said castration, seizure, or detention.

9. Animals affected with Maladie du Coït may, on an order signed by a duly appointed veterinary inspector acting under special instructions from the Veterinary Director General, be forthwith slaughtered, and the carcasses disposed of as in such order provided, and compensation may be paid to the owners of such animals if and when the Act so provides.

10. Before an order is made for the payment of compensation in any of the cases aforesaid there must be produced to the Minister of Agriculture a satisfactory report, order for slaughter and certificate of valuation and slaughter, all signed by an inspector.

J. G. RUTHERFORD,  
*Veterinary Director General.*

HEALTH OF ANIMALS BRANCH,  
DEPARTMENT OF AGRICULTURE,  
OTTAWA.









Maladie du Coit.—Pure Bred Clyde Show Mare. Note the position of off hind leg. See Photograph of acetabulum of the affected limb on next page.









Maladie du Coit.—Extensive ulceration of the acetabulum, a result of the disease. See Photo. of Mare from which this joint was removed on the preceding page.







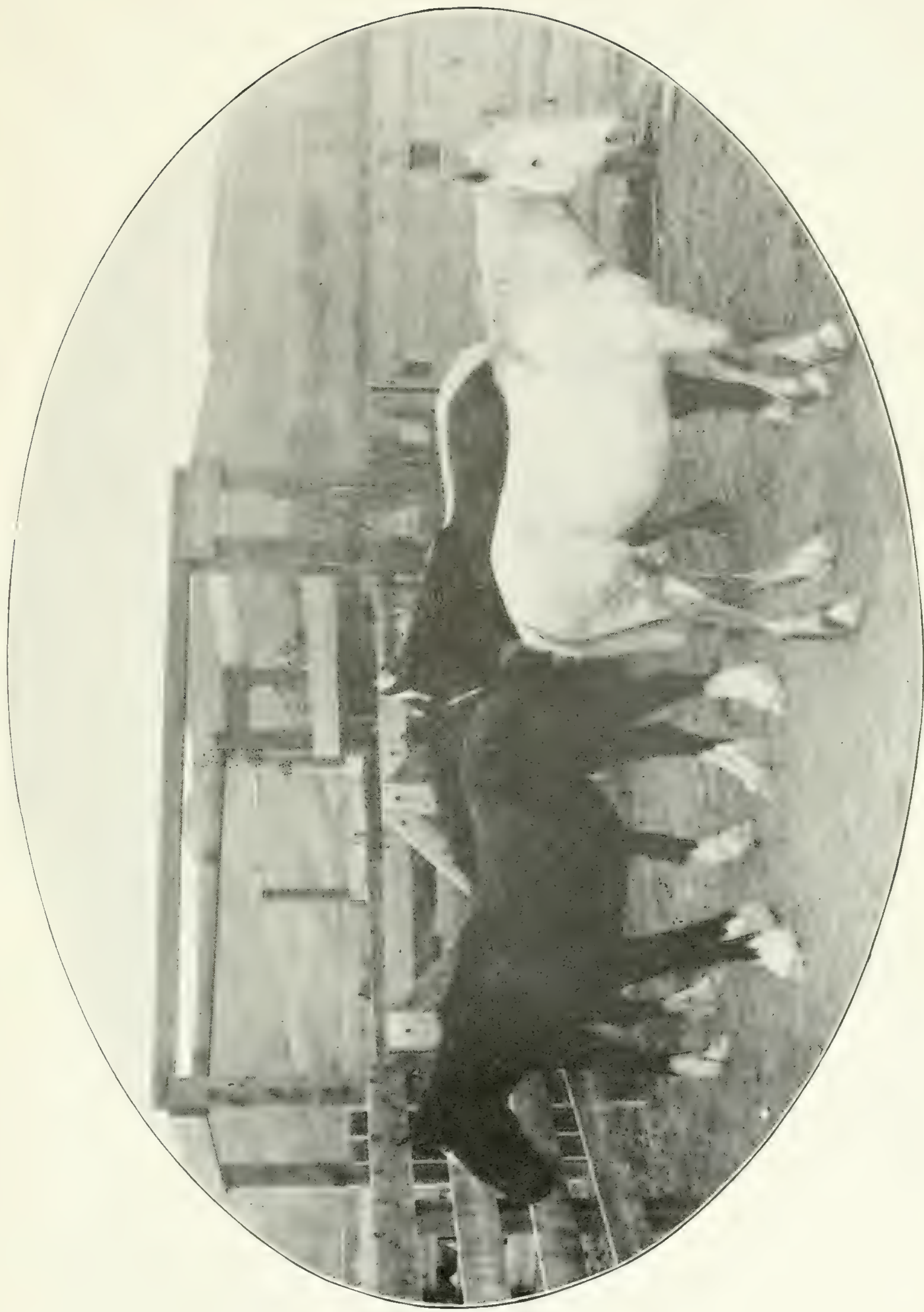


Maladie du Coit. — Brucefield Prince.









Maladie du Coit. A group of affected Mares at the Lethbridge Quarantine Grounds. Photo. taken May, 1905.







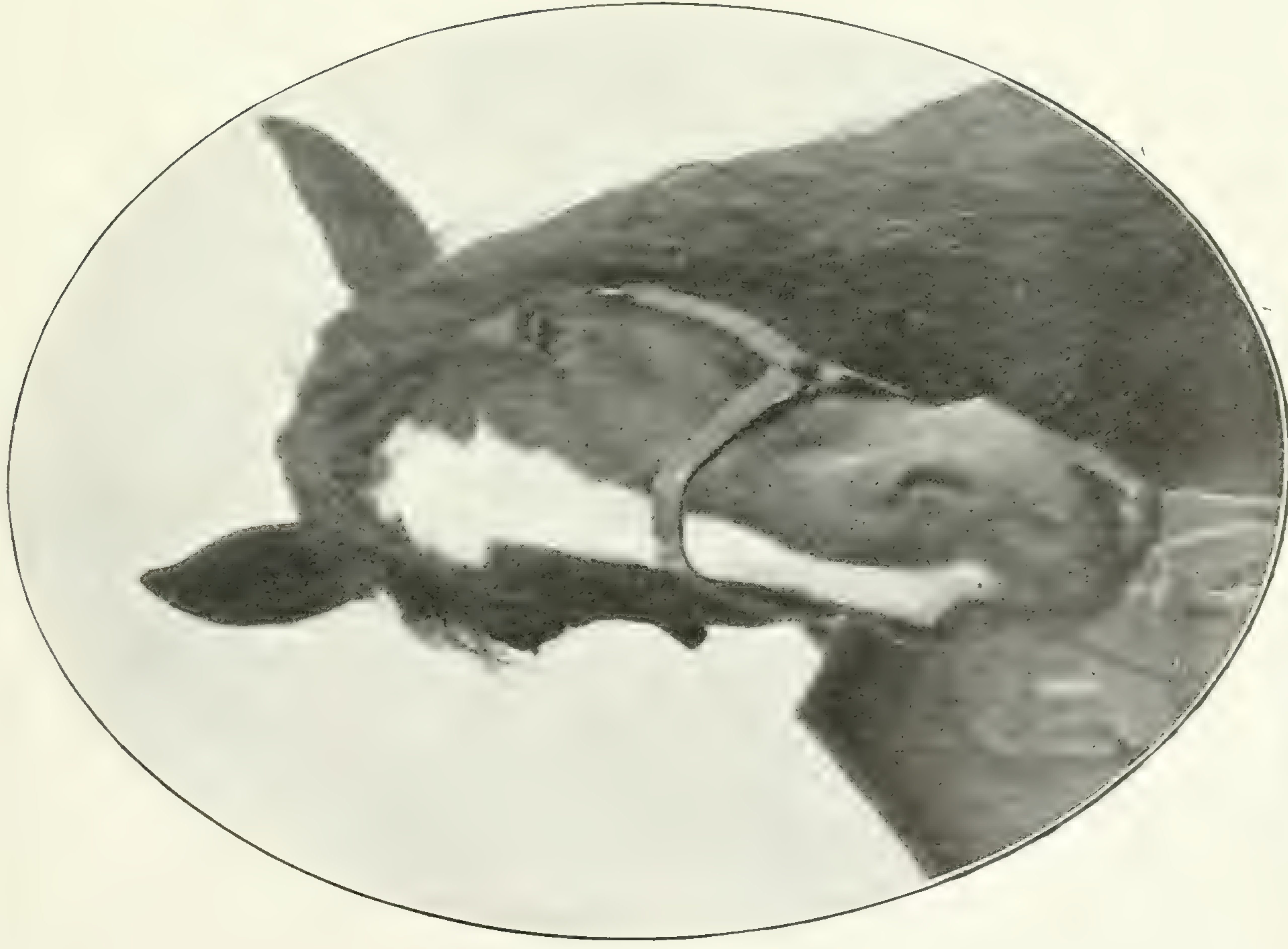


Maladie du Coit.—A group of affected Mares at the Lethbridge Quarantine Grounds. Photo. taken May, 1905,

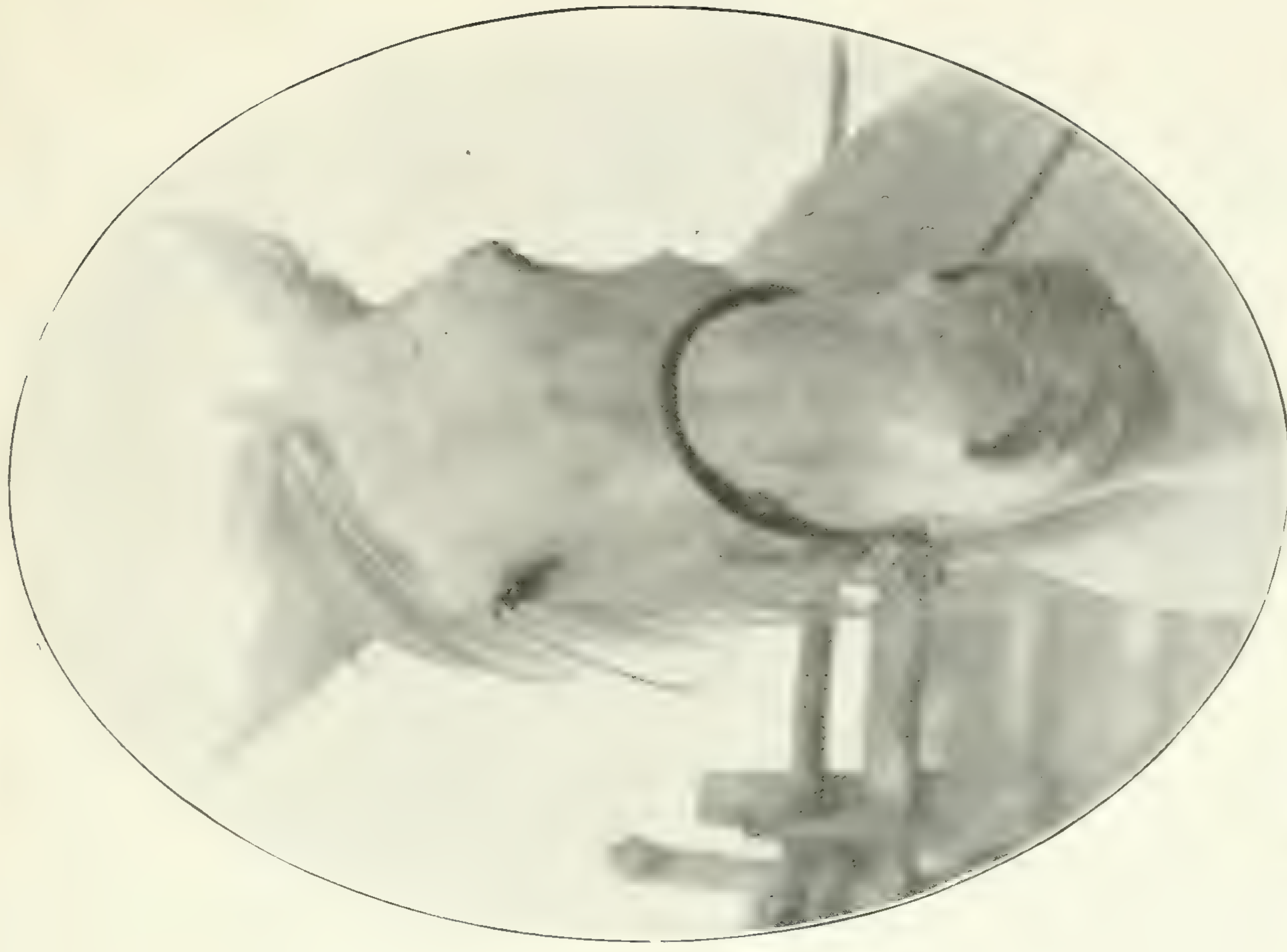








*Fig. 1.*—Maladie du Coit. Brucefield Prince. Note the paralysis of the ear and upper lip with accompanying distortion.

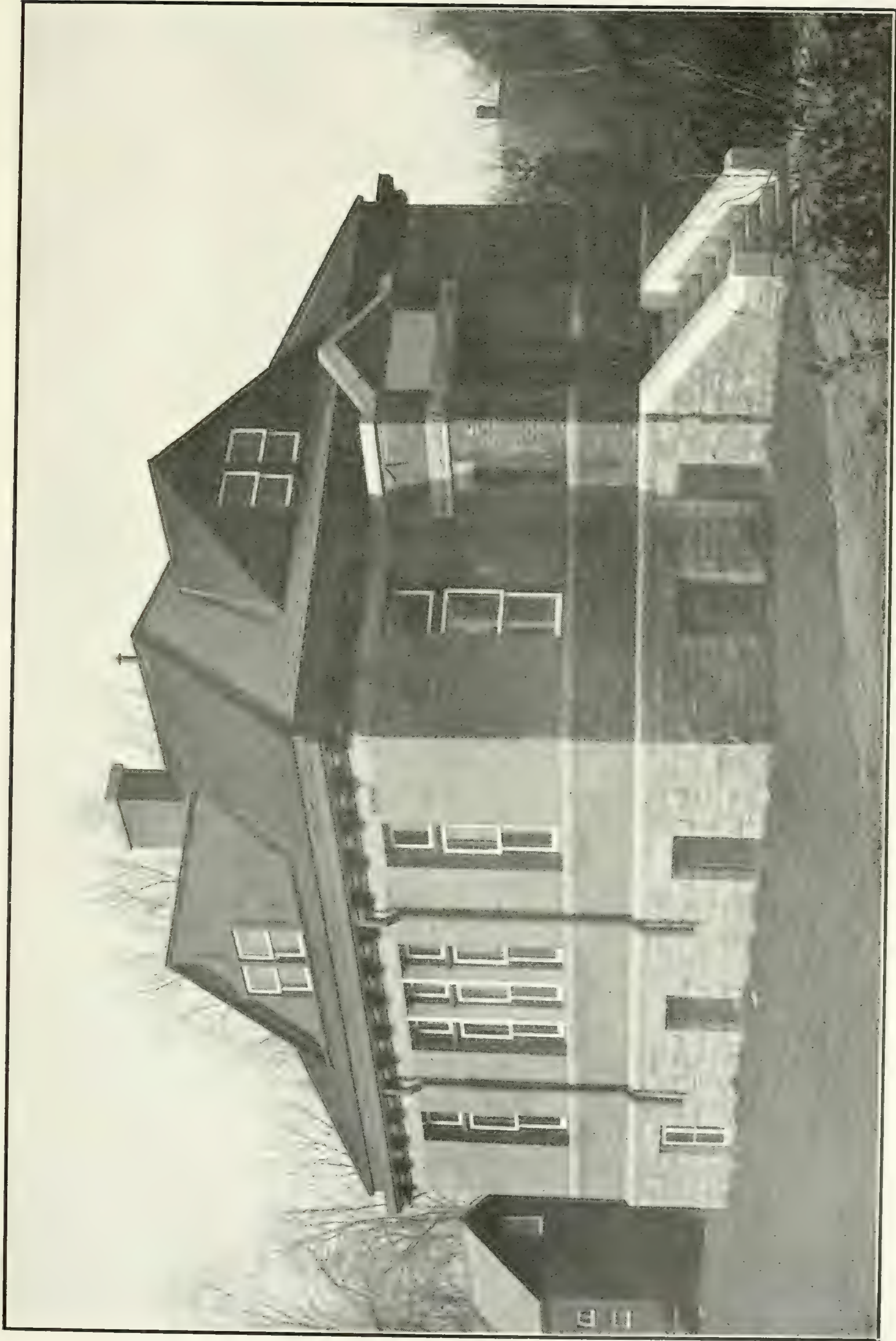


*Fig. 2.*—Maladie du Coit. A Grade Mare in the Medicine Hat District. Note the paralysis of ear and lip with accompanying distortion.









The Biological Laboratory from the South-east.

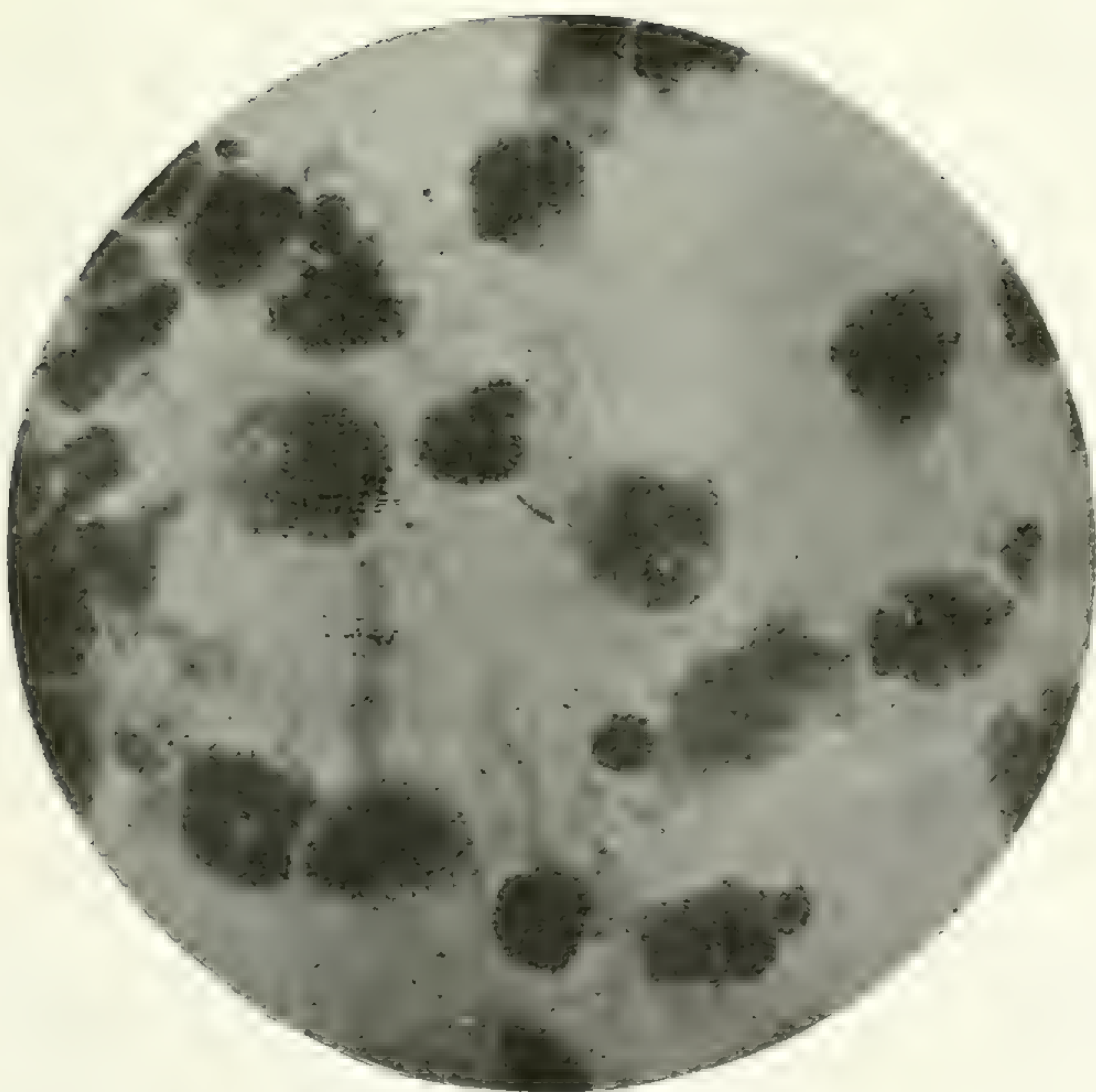








*Fig. 1.*  
Bacillus Mallei from a pure Culture. (x1000).



*Fig. 2.*  
Bacillus Mallei in Pus from an Orchitis. (x1000).



*Fig. 3.*  
Bacillus Mallei. Involution found in an old Broth Culture. (x1000).







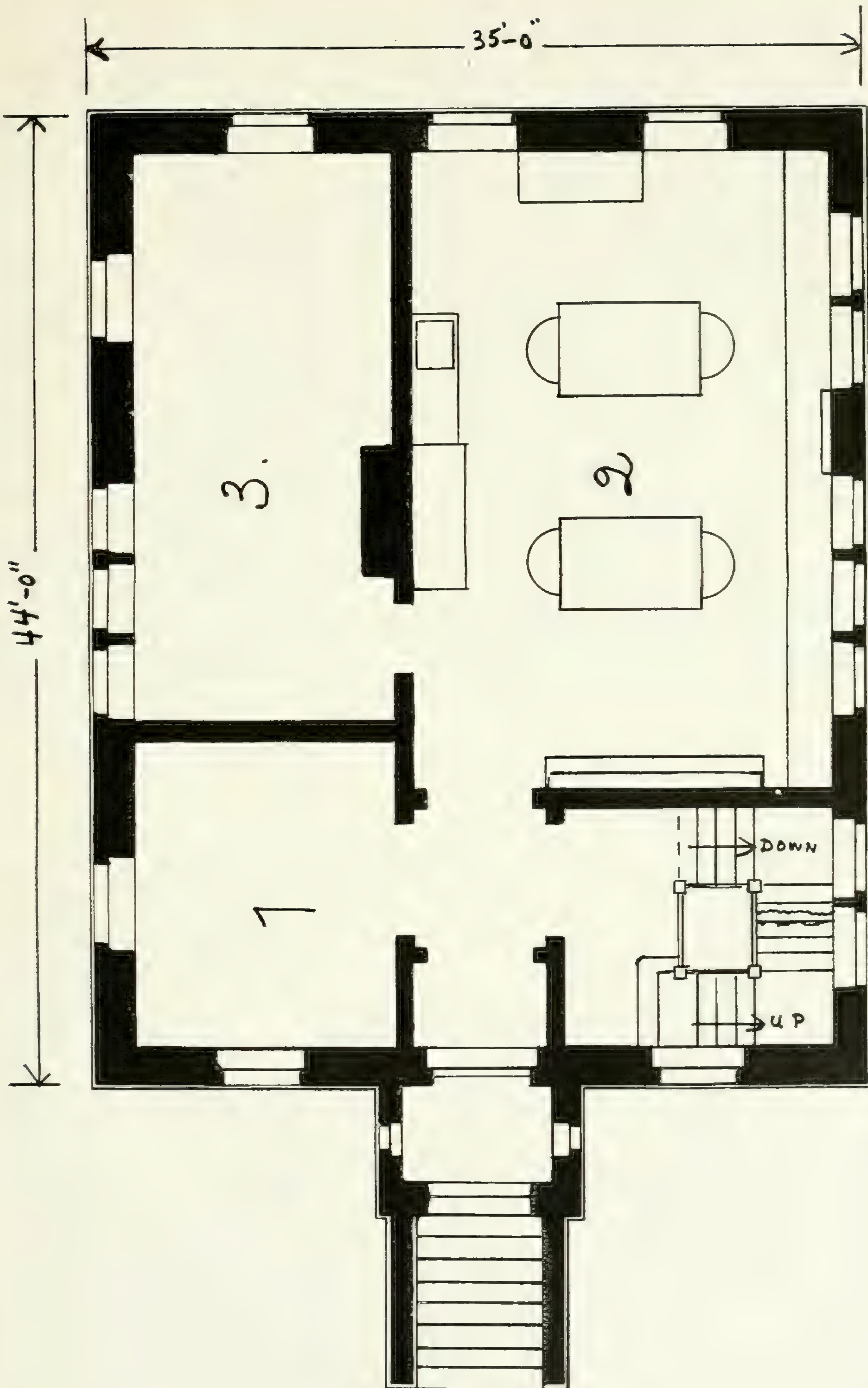


A View of the Main Laboratory.







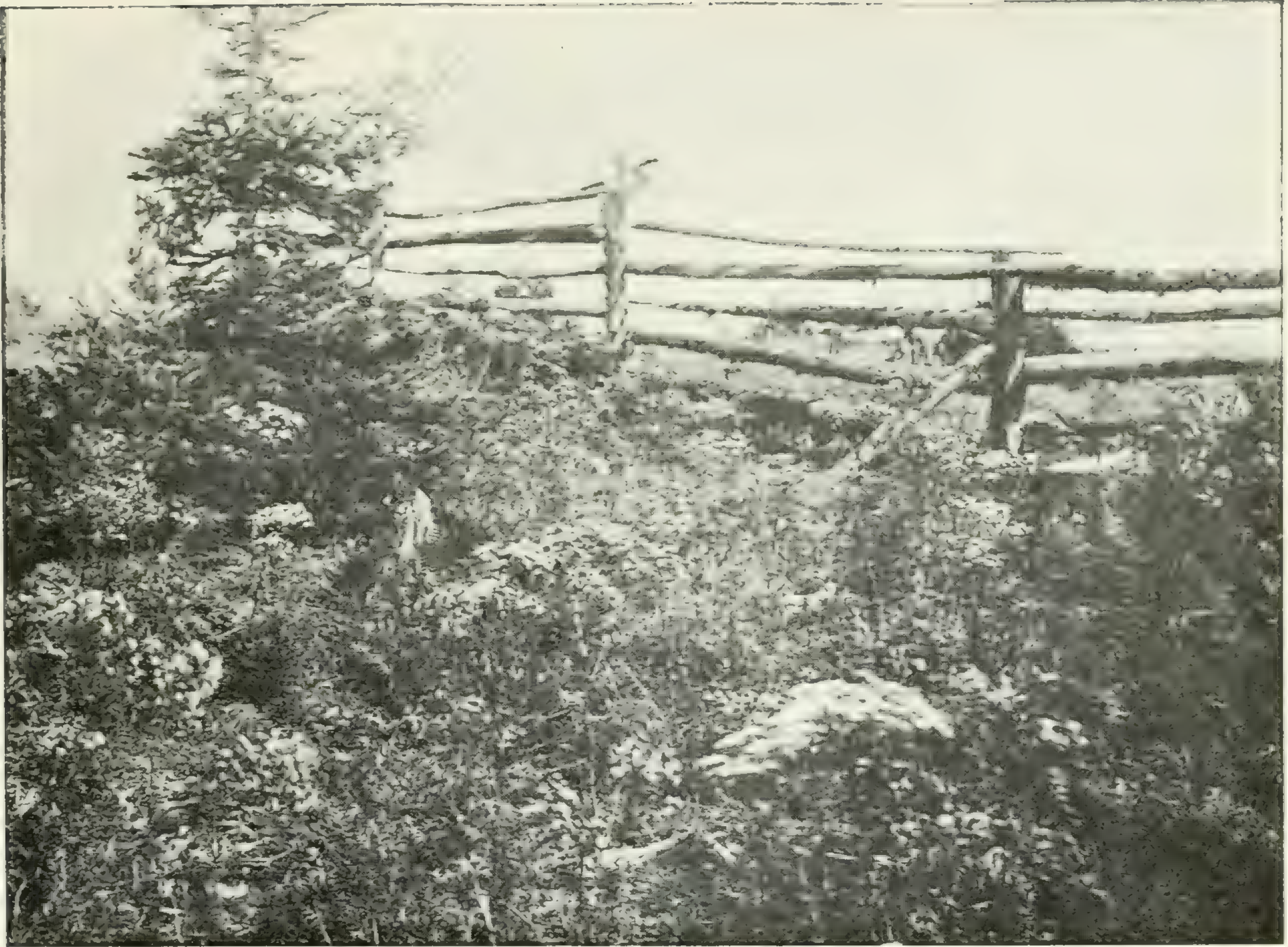


Ground Floor Plan, Biological Laboratory.









FIELD ON WHICH CATTLE WERE KEPT, SHOWING GROWTH OF RAGWORT.



ADJOINING FIELD ON WHICH SHEEP WERE KEPT, SHOWING EFFECT ON WEED.















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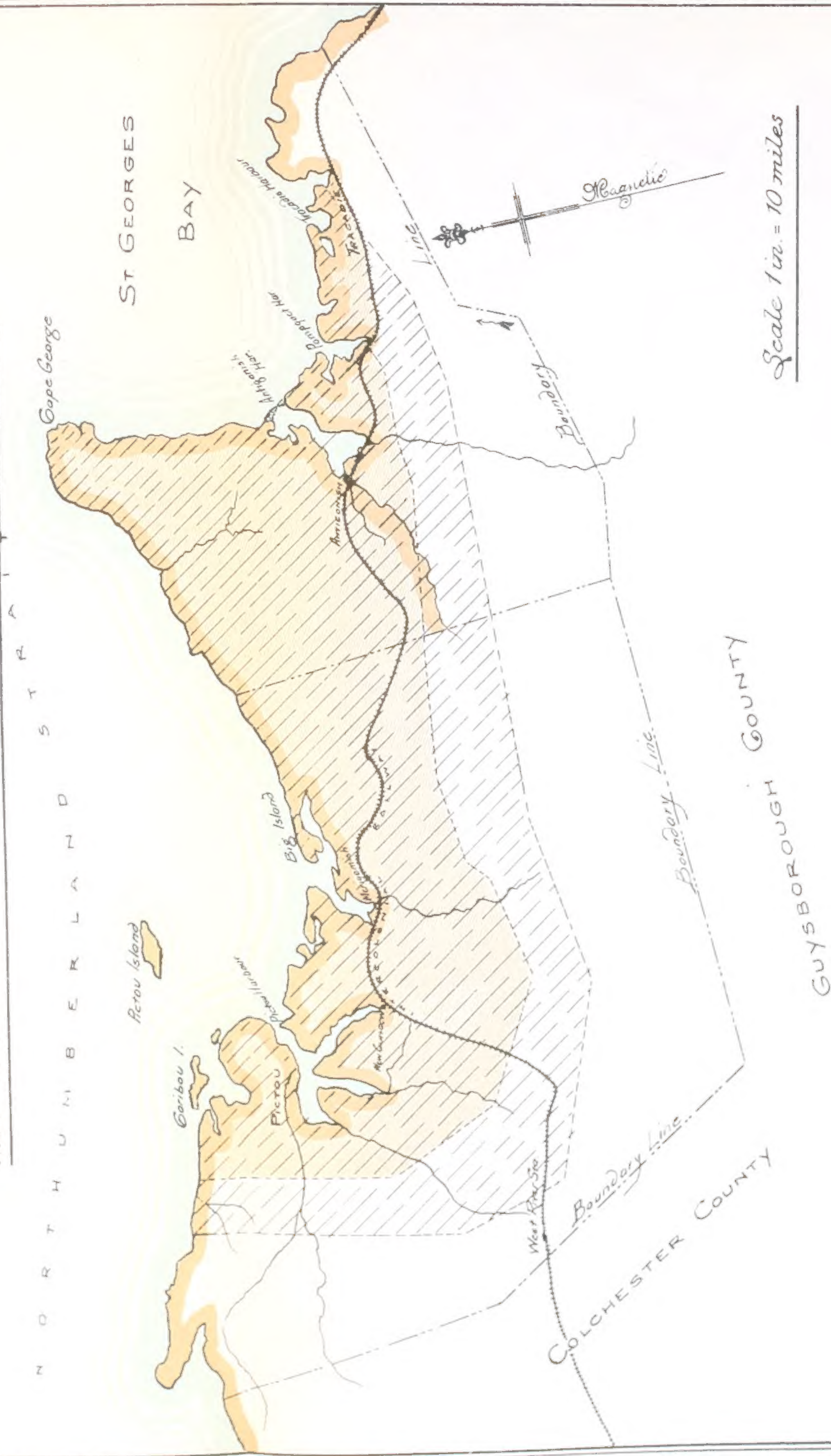


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# MAP OF PICTOU AND ANTIGONISH COUNTIES, N.S.



Shaded portion shows where Synsphaeria Jacobaea exists as a troublesome agricultural weed. Dotted portion indicates territory covered by cattle disease (Synsphaeria cirebosis).  
NOTE: This weed and disease extends much further East than West of the starting point, Pictou Town.



